GEORGE RIVER SALMON STUDIES, 2003

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FOREWORD

Part of the mission of this project is to promote local involvement and to develop the capacity of KNA to engage effectively in salmon resource management. The project's crew consisted of two locally hired KNA technicians and one ADF&G technician. The project annually hosts several student interns from surrounding communities for a "hands-on" work experience at the weir.

Oversight of field operations is shared between KNA and ADF&G. Both organizations make use of weir data during inseason salmon management deliberations. Generally, ADF&G takes the lead in data management, data analysis, and reporting; and KNA takes the lead in field operations. George River weir has developed into a useful tool for salmon management, and serves as a vital platform for collecting data used by other Kuskokwim area salmon projects. Ideally the project will continue to operate as a cooperative project, with active participation by KNA and ADF&G staff, but the outlook for future funding is unstable. Future funding from BSFA is tenuous because of instability in their grant program. Funding sources for ADF&G have included state General Funds and the Western Alaska Disaster grant. The Western Alaska Disaster grant expired in June of 2003. New funding sources need to be identified for both KNA and ADF&G if the George River weir is to continue.

Data presented in this report supercedes information found in previous reports. This report includes data and references to other research projects in the Kuskokwim Area. Complete documentation of these projects and results appear in separate reports.

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ABSTRACT

George River salmon escapements were monitored in 2003 using a resistance board weir. High water in June and early July prevented complete weir operation until 8 July. Total escapements in 2003 included 4,693 chinook, 33,666 chum, and 33,280 coho salmon. In contrast to declining chinook and chum salmon escapements to George River in past years, escapements of these species increased in 2003; similar to chinook and chum salmon escapement trends elsewhere in the Kuskokwim River drainage. Coho salmon escapement to George River was the highest on record, consistent with record coho salmon escapements throughout the Kuskokwim River drainage in 2003. The percentage of age-0.3 chum salmon at George River was higher on average in 2003, consistent with chum salmon age class trends seen elsewhere in the Kuskokwim River drainage. Coho salmon ASL sample goals were reduced in 2003 and preliminary results indicate trends consistent with previous ASL estimates at George River weir and other Kuskokwim River escapement projects. Results from spaghetti tagged chum and coho salmon recaptured at the George River weir in 2003 generated run timing, travel time, and travel speed estimates from the tagging sites near Kalskag and Aniak, consistent with results in 2002.

KEY WORDS: chinook salmon, *Oncorhynchus tshawytscha*, chum salmon, *O. keta*, coho salmon, *O. kisutch*, escapement, age-sex-length, George River, Kuskokwim River, resistance board weir, mark-recapture

INTRODUCTION

George River is located in the middle Kuskokwim River basin and provides spawning and rearing habitat for chinook salmon *Oncorhynchus tshawytscha*, chum salmon *O. keta*, and coho salmon *O. kisutch* which contribute to subsistence, commercial, and sport fisheries of the Kuskokwim River (ADF&G 1998, Figure 1). Small numbers of sockeye salmon *O. nerka* and pink salmon *O. gorbuscha* also migrate in the river. The average annual Kuskokwim River subsistence harvest downstream of George River includes 75,169 chinook salmon, 57,431 chum salmon, 34,288 sockeye salmon, and 26,867 coho salmon (Ward et al. 2003). Kuskokwim River supports one of the largest subsistence salmon fisheries in the world, and for many local residents subsistence fishing is a fundamental component of their culture (Coffing 1991, 1997a, 1997b; Coffing et al. 2000). Lower Kuskokwim River supports commercial fisheries that average an annual harvest of 14,312 chinook salmon, 173,353 chum salmon, 39,905 sockeye salmon, and 422,961 coho salmon (Ward et al. 2003). These commercial fisheries are important to the market economy of Lower Kuskokwim River communities (Buklis 1999; Ward et al. 2003). George River salmon production contributes to Kuskokwim River salmon harvests in terms of numbers of fish, and by adding to the diversity of salmon spawning populations supporting these fisheries.

Historically, the northern region of the Kuskokwim Mountains, including the George River drainage, supported a relatively high level of mining activity. Since the early 1900s, several small to moderate size mining camps operated intermittently in the middle and upper George River drainage (Brown 1983). A small tributary of George River named Julian Creek received intermittent mining activity since the early 1900s, and this activity continues at a recreational level today. Mining interest in the northern region of the Kuskokwim Mountains expanded in recent years with proposed large-scale open-pit gold mining operations at Donlin Creek in the Crooked Creek drainage, which borders the George River drainage. Development of Donlin Creek mine heightens interest and need for continued monitoring of George River salmon populations. Impacts of this proposed mine will likely include increased recreational and subsistence activities in the George River area because of a resulting increase in human population associated with development of Donlin Creek mine.

George River is popular for sportfishing, and the river is an access route for recreational and subsistence hunters. Professional guide operations based within and outside of the Kuskokwim Area use George River as an angling and hunting destination for their clients. In 2000, George River received some of the highest chinook salmon sportfishing angler effort in the Middle Kuskokwim River area (Burr 2002). Escapement monitoring will help ensure continued wise management practices to provide sustainable harvest opportunity for these various user groups.

Objectives

1. Determine daily and total escapements of chinook, chum, and coho salmon to George River

during the target operational period of 15 June through 20 September;

2. Estimate age-sex-length (ASL) composition of total chinook and chum salmon escapements to George River from a minimum of three pulse samples collected from each third of the run, such that simultaneous 95% confidence intervals of age composition in each pulse are no wider than 0.20 ($\alpha = 0.05$ and $d = 0.10$);

3. Estimate ASL composition of total coho salmon escapement to George River from a minimum total run sample goal divided into three pulse samples collected from each third of the run;

4. Profile habitat variables: daily water temperature, water level, and water chemistry (conductivity, pH, alkalinity, turbidity, color, calcium, magnesium and iron) of George River;

5. Recover tag numbers and associated information from chum, sockeye, and coho salmon in support of a mainstem Kuskokwim River mark-recapture study; and

6. Serve as a monitoring site for chinook salmon equipped with radiotelemetry transmitters deployed as part of a mainstem Kuskokwim River mark/recapture study.

Background

Kuskokwim River drains an area of approximately 50,000 square miles, 11 percent of the total area of Alaska (Brown 1983, Figure 2). Each year mature Pacific salmon *Oncorhynchus spp.* return to the river and support intensive subsistence and commercial fisheries with an average annual harvest of 860 thousand salmon (Ward et al. 2003). The subsistence fishery is a vital cultural component for most Kuskokwim Area residents, and the subsistence harvest of salmon contributes substantially to the regional food base (Coffing 1991, Coffing 1997a, Coffing 1997b, Coffing et al. 2000). The commercial salmon fishery, though modest in value compared to other areas of Alaska, has been an important component of the market economy in Lower Kuskokwim River communities (Buklis 1999, Ward et al. 2003). Salmon that contribute to these fisheries spawn and rear in nearly every tributary of the Kuskokwim River basin; and historically, few spawning streams received any rigorous salmon escapement monitoring. Deficiency of escapement data limited the ability of management authorities and researches to assess the adequacy of escapements and the impacts of management decisions. Even information such as general inter- and intra-annual patterns in ASL composition have been lacking for Kuskokwim River salmon escapements.

Historically, several Kuskokwim River tributaries were sometimes surveyed for spawning salmon through the use of small fixed-wing aircraft (Ward et al. 2003, Gilk and Molyneaux *In press*). Biologists from ADF&G conducted sporadic aerial surveys to document salmon escapements in George River since 1960 (Appendix A; Schneiderhan 1983, Burkey and Salomone 1999). Aerial surveys were typically flown in late July when chinook salmon are believed to be at their peak spawning abundance. Aerial surveys provide an index of escapement abundance and their utility for indexing chum and coho salmon escapements is not reliable under conditions found in the Kuskokwim River basin (Ward et al. 2003).

The only long-term ground-based escapement monitoring projects in the Kuskokwim River basin have been in Kogrukluk River (1976 to present; Shelden et al. 2004) and Aniak River (1980 to present; Sandall *In press*). These tributaries constitute a modest fraction of the total Kuskokwim River basin, and are incomplete in their representation of the diversity of salmon populations that contribute to harvests. In addition, the pattern of chum salmon ASL composition observed in Kogrukluk River has been shown to be an anomaly (DuBois and Molyneaux 2000), and passage estimates generated by the Aniak River sonar project are not apportioned to species. Other escapement monitoring projects were developed within the Kuskokwim River basin, but these initiatives were short-lived (Ward et al. 2003). Inception of the George River weir in 1996, coupled with other initiatives begun in the late 1990s and beyond (i.e. Stuby 2003, Chythlook and Evenson 2003, Kerkvliet et al. 2003, Gilk and Molyneaux *In press*), provides some of the additional escapement monitoring and abundance estimates required for sustainable salmon management (e.g. Holmes and Burkett 1996, Mundy 1998).

The goal of salmon management is to provide for sustainable long-term fisheries, and is achieved in part by ensuring adequate numbers of salmon escape the fisheries to spawn each year. Since 1960, ADF&G has been responsible for management of Kuskokwim River subsistence, commercial, and sport fisheries. Management authority for the subsistence fishery was broadened in October 1999 to include the federal government under Title VIII of ANILCA. U.S. Fish and Wildlife Service (USFWS) is the federal agency most involved in the Kuskokwim Area. In addition, Tribal groups such as Kuskokwim Native Association (KNA) are charged by their constituency to actively promote a healthy and sustainable subsistence salmon fishery. These three groups combined their resources to develop several new projects, including George River weir, to better achieve their common goal of providing for sustainable long-term salmon fisheries in the Kuskokwim River.

Sustaining Kuskokwim River salmon fisheries through effective management requires more than just ensuring adequate escapement. Ground-based escapement projects, such as George River weir, commonly serve as platforms for collecting other types of information useful for salmon management and research. ASL compositions of salmon populations provide insight into fluctuations in salmon abundance, and they are used for developing spawner-recruit relationships used in formulating escapement goals (DuBois and Molyneaux 2000). Collection of ASL data is typically included in most escapement monitoring projects (e.g., Estensen 2002, Zabkar and Harper *In press.*, Roettiger et al. *In press.*, Shelden et al. 2004). Water temperature, water chemistry and stream discharge are all fundamental variables of the stream environment that directly and indirectly influence salmon productivity (Hauer and Hill 1996). These variables can change by anthropogenic activities (mining, timber harvesting, man-made impoundments, etc.; NRC 1996), or climatic changes (e.g., El Nino and La Nina events) that can in turn have an effect on stream productivity and timing of salmon migration and spawning events (Kruse 1998). George River weir, along with other Kuskokwim River escapement projects, serves as a vital platform for collecting information used by other projects. The *Kuskokwim River Chinook Salmon Stock Assessment Project* (Stuby 2003) is critically dependent on data collected from

George River weir to generate total river abundance estimates. The *Kuskokwim River Salmon Mark/Recapture Project* (Kerkvliet et al. 2003) uses weir-recaptured spaghetti tagged chum, sockeye, and coho salmon to develop and test total river abundance estimates, and these recaptures are critical for determining stock-specific run timing in the mainstem Kuskokwim River. The operational plan for George River weir included collecting ASL, habitat, and mark-recapture data that contributed towards long-term information needs. Additionally, George River weir has served as collection site for genetic and juvenile salmon information, and will continue to do so in the future.

The need to address data gaps for Kuskokwim River salmon populations became even more important in September 2000, when the Alaska Board of Fisheries (Board) classified both Kuskokwim River chinook and chum salmon as "yield concerns" (as defined in 5 AAC 39.222) because of the chronic inability of managers to maintain expected harvest levels (Burkey et al. 2000a, Burkey et al. 2000b). In response to the yield concern classifications, the Board instituted a rebuilding plan for the Kuskokwim River in 2001, which resulted in more conservative management of Kuskokwim River commercial, subsistence, and sport fisheries during June and July. The plan called for little expectation of any commercial fishing during June and July to reduce directed chum salmon harvest, and incidental chinook salmon harvest. The outlook was purposely phrased "little expectation" as a hedge in case salmon runs returned much stronger than expected. Additionally, subsistence fishers were placed on a fishing schedule to allow blocks of salmon to pass through the fishery unmolested, while still providing fishers with adequate time to achieve their harvest needs. The subsistence fishing schedule could be discontinued if salmon runs returned much stronger than expected. Lastly, recreational sport fishers were limited to one chinook and chum salmon per day, and the opening day for chinook and chum salmon directed sportfishing was delayed until 15 June.

METHODS

Study Site

George River originates in the northern Kuskokwim Mountains within the middle Kuskokwim River basin and flows south for approximately 75 miles to its confluence with the Kuskokwim River at river mile (rm) 309 (river kilometer (rkm) 497) (Figure 1). George River drains an area of approximately 1,400 square miles of mostly upland spruce-hardwood forest. Major tributaries include the East, South, and North Forks, and Michigan and Beaver Creeks. White spruce and scattered birch or aspen are common on south-facing slopes, and black spruce is characteristic on northern exposures and poorly drained areas. The understory consists of spongy moss and low brush in poorly drained areas, grasses in well-drained areas, and willow and alder in open forest near timberline.

The weir site is located in a poorly drained area at Latitude N61° 55' 363" and Longitude W157°

41' 880", and is approximately 4 rm (7 rkm) upstream of the river's confluence with the Kuskokwim River (Figure 1). At average flow, low river gradient at this location produces a stream discharge of approximately 1,974 ft^3/s (55.9 m^3/s). Profile of the 360-ft channel is uniform, and the central 300-ft measures approximately three feet in depth during average water levels. The substrate is composed of medium sized gravel and coble.

Georgetown is the nearest settlement located on the mainstem of the Kuskokwim River approximately one half-mile upstream from the George River confluence. Georgetown is currently the homestead of Bob, Anne, and Richard Vanderpool. The Vanderpool family does not have telephone service, but can be contacted by marine VHF radio. In support of the project, the Vanderpool family allowed KNA and ADF&G to use their facilities for winter storage of camp equipment. Historically, the formal community of Georgetown was an early 1900s mining settlement of approximately 200 residents until a fire destroyed most of the town in 1911 (Brown 1983).

Approximately 20 miles upstream from the George River confluence is the community of Red Devil, population 44 (Williams 2000). The town does not have a grocery store, but gasoline can sometimes be purchased from a local vendor who operates Vanderpool Flying Service. Several air taxi carriers service Red Devil from Aniak six days a week.

Approximately 20 miles downstream from the George River confluence is the community of Crooked Creek, population 137 (Williams 2000). Crooked Creek has retail outlets for groceries and gasoline, but supplies can be limited. Several air taxi carriers service Crooked Creek from Aniak six days a week.

Weir Design and Maintenance

Weir Design

A weir has been used to enumerate salmon escapements in George River since 1996 (Linderman et al. 2003a). The original fixed weir design was replaced with a resistance board weir in 1999. The weir used in 2003 spanned the 360 ft wide channel, except for ten feet on either side where fixed-panel sections were used. Width of the resistance board panels was 36-in and picket spacing was 1.25-in (gap between pickets). Narrow picket spacing allowed for complete census of all but the smallest returning salmon, and small resident species that were able to pass between pickets. Stewart (2002) describes modifications in resistance board weir design implemented since 1999.

Facilitating Upstream Fish Passage

The resistance board weir incorporated four methods to facilitate upstream fish passage; additional details of these methods are described in Linderman et al. (2003a). The method utilized most consisted of a passage chute in combination with a fish trap. The fish trap acted as a holding pen for collecting fish used in biological sampling, and as a platform for enumerating fish passage. A second method consisted of an enclosed passage chute used exclusively for enumerating fish passage. A third method consisted of modified resistance board weir panels termed "counting panels", which allowed fish to be enumerated as they passed through openings between panel pickets. A fourth method consisted of removing a panel from the weir, creating a temporary breach for fish to pass through and be enumerated.

Facilitating Downstream Fish Passage

For various reasons, fish sometimes migrated downstream and required an avenue for safe passage over the weir. This behavior was especially common among longnose suckers *Catostomus catostomus* in late summer.

The resistance board weir provided an effective means of accommodating downstream fish passage through incorporation of downstream passage chutes. Each chute consisted of a single panel set to allow some water to flow over the distal end of the panel. Details of downstream passage chutes are described in Linderman et al. (2002). Several of these chutes were incorporated along the length of the weir. Fish do not typically pass upstream over these chutes, and they are only set during periods of active downstream fish migration. Downstream passage chutes were not used during periods of strong upstream salmon passage.

Facilitating Boat Passage

Boats passed at a designated boat gate located near the thalweg, and boat operators were able to pass with little or no involvement by the weir crew. The boat gate consisted of boat passage panels (Linderman et al. 2002). Weight of a passing boat submerged the boat passage panels, allowing boats to pass over the weir. Panels would resurface once the boat cleared the weir. Boats with jet-drive engines were most common and could pass upstream and downstream over the boat gate after reducing their speed to 5 miles per hour or less. Operators of boats with propeller-drive engines had to use a towrope when passing upstream, and turn off their engines and tilt their motors when passing downstream (Linderman et al. 2002).

Weir Cleaning and Inspection

The weir was cleaned several times each day, typically at the beginning and end of counting shifts. A technician walked across the weir to partially submerge each panel, thereby allowing the current to wash any debris downstream. A rake was used to push larger debris loads off the weir. Each time the weir was cleaned, a visual inspection was made of weir panels, substrate rail, fish trap, and fixed weir sections to ensure no breaches would allow fish to pass upstream unobserved. If conditions prevented an adequate visual inspection, technicians used snorkel gear to ensure there were no breaches in the weir.

Fish Passage and Escapement

Total Escapement

The target operational period for counting fish was 15 June through 20 September, spanning most of salmon runs. The term "total escapement" used in this report refers to cumulative escapement of a given species during the target operational period. Total escapement may consist of observed passage and estimated passage, the later being applied to days when the weir was inoperable. Inoperable periods may have been caused by interruptions in operations, a delayed start date, or a premature end date. Counts of non-salmon species were reported as observed passage.

Observed Fish Passage

All fish observed passing upstream through the weir were enumerated by species. Daily enumeration typically began by 0800 hours, and typically ended by 1200 hours depending on hourly abundance. The most commonly used procedures consisted of a crewmember positioned above the fish gate or exit gate to enumerate passage with a zeroed multiple tally counter. When utilizing counting panels or a removed weir panel, crewmembers were positioned with the best view of fish passage and enumerated fish with a zeroed multiple tally counter. Counting continued for a minimum of one hour, or until passage waned to near zero, then the passage location was closed. Crewmembers recorded fish passage in a designated notebook and zeroed the tally counter for the next count. This procedure was repeated several times each day, even when passage numbers were low. At the end of each day, daily and cumulative counts were copied to logbook forms. Details of the logbook and forms can be found in Linderman et al. (2003a).

Estimated Fish Passage

Upstream salmon passage was estimated for days the weir was inoperable. Estimates were assumed to be zero if passage was considered negligible based on historical data and run timing indicators. Otherwise, estimates for a single day were calculated as the average observed passage one or two days before and after the inoperable day, minus any observed passage from the inoperable day. Daily estimates for inoperable periods lasting two or more days were derived by one of three methods, the first was termed "linear method", the second was termed "proportion method", and the third utilized radio tagged chinook salmon returning to the George

River in 2003.

The linear method extrapolated daily estimates from average observed passage two days before the inoperable period to average observed passage two days after the inoperable period. This method resulted in a linear increase or decrease in daily estimates over the duration of the inoperable period. Daily estimates from this method were calculated using the formula:

$$\hat{n}_{d_i} = \alpha + \beta \cdot i \qquad (1)$$

$$\alpha = \frac{n_{d_1-1} + n_{d_1-2}}{2}$$

$$\beta = \frac{\left(n_{d_I+1} + n_{d_I+2}\right) - \left(n_{d_1-1} + n_{d_1-2}\right)}{2(I+1)}$$

for $(d_1, 2, \ldots, d_i, \ldots d_I)$

where

$\hat{n}_{d_i}$ = passage estimate for the i^{th} day of the period $(d_1, 2, \ldots, d_i, \ldots d_I)$ when the weir was inoperative;

n_{d_I+1} = observed passage of the first day after the weir was reinstalled;

n_{d_I+2} = observed passage of the second day after the weir was reinstalled;

n_{d_1-1} = observed passage of the one day before the weir was washed out;

n_{d_1-2} = observed passage of the second day before the weir was washed out;

I = the number of inoperative days.

The proportion method was used if evidence supporting similar fish passage characteristics existed between estimated and model data sets. A model data set could be from a different year at George River, or from the same year at a neighboring project. In either case, daily passage was based on a model data set's daily passage proportions, and was calculated using the formula:

$$n_{d_i} = \left(\frac{\left(n_{2d_i} \times n_{1t_1}\right)}{n_{2t_1}}\right) - n_{o_i} \qquad (1)$$

where:

n_{d_i} = passage estimate for a given day (i) of the inoperable period;

n_{2d_i} = passage for the i^{th} day in the model data set 2;

n_{1t_1} = known cumulative passage for the operational time period (t_1) from the estimated data set 1;

n_{2t_1} = known cumulative passage for the corresponding time period (t_1) from the model data set 2;

n_{o_i} = observed passage (if any) from the given day (i) being estimated.

In 2003, the Kuskokwim River chinook salmon radio telemetry project (Stuby *In Press*) presented an opportunity for estimating chinook salmon passage during the 15 June through 7 July inoperable period at George River weir. A cumulative passage estimate was calculated from the cumulative passage of chinook salmon during the operational period and the proportion of radio tagged chinook salmon past the weir site before and after the inoperable period using the formula:

$$N_G = \left(\frac{(n_{rt_1} \times N_{t_2})}{n_{rt_2}} \right) \tag{1}$$

where:

N_G = cumulative passage estimate for the 15 June through 7 July inoperable period at George River weir (t_1);

n_{rt_1} = number of radio tagged chinook salmon past the weir site during the 15 June through 7 July inoperable period at George River weir (t_1);

N_{t_2} = cumulative chinook salmon passage for the 8 July through 20 September operational period at George River weir (t_2);

n_{rt_2} = number of radio tagged chinook salmon past the weir site during the 8 July through 20 September operational period at George River weir (t_2).

The cumulative estimate (N_G) was extrapolated into daily passage estimates using chinook salmon passage at another Kuskokwim River escapement project as a model data set. The model data set was chosen if evidence supporting similar fish passage characteristics existed between the tributaries in question, and passage may have been shifted plus or minus a certain number of days to better match fish passage characteristics between the two tributaries. In this case, observed chinook salmon passage at George River weir in 2003 was most similar to chinook salmon run characteristics at Kogrukluk River weir in 2003 when passage at Kogrukluk River weir was shifted seven days later. Each daily estimate was calculated by applying the proportion of Kogrukluk River daily passage plus seven days to the cumulative George River passage estimate (N_G) using the formula:

$$n_{Gd_i} = \left(\frac{(n_{Kd_{i+7}} \times N_G)}{N_{Kt_1+7}} \right) - n_{p_i} \tag{2}$$

where:

n_{Gd_i} = passage estimate for a given day (i) of the 15 June through 7 July inoperable period at George River weir (t_1);

$n_{Kd_{i+7}}$ = daily passage at Kogrukluk River weir for the i^{th} day at George River plus seven days ($i+7$);

N_G = cumulative passage estimate for the 15 June through 7 July inoperable period at George River weir (t_1);

N_{Kt_1+7} = cumulative passage at Kogrukluk River weir during the 15 June through 7 July inoperable period at George River weir (t_1) shifted seven days later (t_1+7, i.e. 22 June through 14 July at Kogrukluk River weir);

n_{p_i} = Partial day observed passage at George River weir (if any) from the given day (i) being estimated.

Carcass Counts

Spawned out salmon and carcasses of dead salmon (both hereafter referred to as carcasses) that washed up on the weir, were counted by species and sexed, and passed downstream. At the end of each day, daily and cumulative carcass counts were copied to logbook forms. Details of the logbook and forms can be found in Linderman et al. (2003a).

ASL Composition of Escapement

The ASL composition of the total annual chinook, chum, and coho salmon escapements were estimated by sampling a fraction of the fish passage and applying the ASL composition of those samples to the total escapement as described in DuBois and Molyneaux (2000).

Sample Collection

A pulse sampling design was used for chinook and chum salmon, in which intensive sampling was conducted for one to three days followed by a few days without sampling. The goal for each pulse was to collect samples from 210 chinook salmon and 200 chum salmon. These sample sizes were selected for simultaneous 95% confidence interval estimates of age composition proportions no wider than 0.20 (Bromaghin 1993). The minimum number of pulse samples was one per species from each third of the run.

The coho salmon sample design was modified from previous years to account for stability in ASL compositions over the duration of the coho salmon run. Pulse sample goals were replaced with a total run sample goal of 170 fish in 2003. The total run sample goal was divided between three pulse samples, each representing a third of the run.

Salmon were sampled from the fish trap installed in the weir. The general practice was to open the entrance gate and leave the exit gate closed, which allowed fish to accumulate inside the holding pen. The holding pen was typically allowed to fill with fish and sampling was done during scheduled counting periods.

Scales were removed from the preferred area of the fish (INPFC 1963). A minimum of three scales were taken from each fish and mounted on numbered and labeled gum cards. Sex was determined by visually examining external morphology, keying on the development of the kype, roundness of the belly and the presence or absence of an ovipositor. Length was measured to the nearest millimeter from mid-eye to tail fork. After each fish was sampled, it was released into a recovery area upstream of the weir. After sampling was completed, relevant information such as sex, length, date, and location was copied from hardcopy forms to computer mark-sense forms. Further details of sampling procedures can be found in DuBois and Molyneaux (2000) and Linderman et al. (2003a). The completed gum cards and data forms were sent to the Bethel and Anchorage ADF&G offices for processing.

Weir crews conducted active sampling on chinook salmon to increase chinook salmon sample sizes. Active sampling consisted of capturing and sampling chinook salmon while actively passing and enumerating fish. Further details of active sampling procedures are described in Linderman et al. (2002).

Estimating ASL Composition of Escapement

ADF&G staff in Bethel and Anchorage aged scales, processed the ASL data, and generated data summaries (DuBois and Molyneaux 2000). These procedures generated two types of summary tables for each species; one described the age and sex composition and the other described length statistics. These summaries account for ASL composition changes over the season by first partitioning the season into temporal strata based on pulse sample dates, applying ASL composition of individual pulse samples to the corresponding temporal strata, and finally summing the strata to generate the estimated ASL composition for the season. This procedure ensured ASL composition of the total escapement was weighted by fish abundance in the escapement rather than fish abundance in the samples. Likewise, estimated mean length composition of total escapement was calculated by weighting sample mean lengths from each stratum by the escapement of chum salmon past the weir during that stratum. Similar procedures were used for coho salmon, however, sample design modifications implemented in 2003 reduced the ability to estimate ASL composition changes over the season in favor of estimating ASL composition for the entire run.

Ages were reported in the tables using European notation, with total age reported in parenthesis. European notation is composed of two numerals separated by a decimal, where the first numeral indicates the number of winters spent by the juvenile fish in fresh water and the second numeral indicates the number of winters spent in the ocean (Groot and Margolis 1991). Total age is equal to the sum of these two numerals, plus one to account for the winter when the egg was incubating in the gravel. For example, a chinook salmon described as an age-1.4 fish under European notation has a total age of 6 years.

The original ASL gum cards, acetates and mark-sense forms were archived at the ADF&G office in Anchorage. The computer files were archived by ADF&G in the Anchorage and Bethel offices.

Mark/Recapture Tag-Recovery

George River weir was integrated into two mark/recapture tagging studies conducted in the mainstem Kuskokwim River in 2003. In one study, uniquely numbered spaghetti tags were attached to chum, sockeye, and coho salmon in order to estimate annual abundance of these species upstream of the tagging site (Kerkvliet et al. *In press*). Fish were tagged near Kalskag and Aniak, and George River weir served as one of the tag-recovery locations. The weir crew gathered three sets of data in association with this study: (1) recaptured tag numbers, (2) total tagged fish observed, and (3) a secondary mark sample. Recaptured tag numbers and tagged fish observed data was used in generating abundance and run timing estimates, and the secondary mark sample was used for determining any tag loss. Details of tagging data collection can be found in Linderman et al. (2003a).

The second tagging study involving George River weir was a radiotelemetry project intended to estimate the total abundance of chinook salmon in the Kuskokwim River in 2003 (Stuby *In press*). Radio transmitters were inserted into chinook salmon caught near Aniak, and one of several radio receiver stations was placed 100-yd upstream of the weir to monitor movement of tagged chinook salmon in the George River. Known chinook salmon escapement, ASL, and receiver data at the weir, were used with similar data from other weir projects to develop total chinook salmon abundance estimates upstream from the tagging site.

Habitat Profiling

Stream Temperature

Temperature was measured with a thermometer scaled to 0.1°C increments and calibrated against a precision thermometer certified by the National Institute of Standards and Technology. Stream temperature measurements for the George River were collected from a station on the West shore, approximately 25-yds upstream of the weir. Measurements were made at least once each day at 0730 or 1030 hours.

River Stage

Daily operations included monitoring fluctuations in water level with a standardized staff gage. The staff gage consisted of a metal rod incremented in centimeters and secured to a stake driven into the stream channel approximately 100-yds upstream of the weir. Height of the water surface as measured against the staff gage represented the "stage" of the water level above an arbitrary datum plane. The stage of the water level was measured at least once each day at 0730 or 1030 hours. Measurements were recorded more frequently when water levels were changing rapidly.

The staff gage was calibrated against semi-permanent benchmarks intended to allow for consistency of the stage measurements between years (Appendix B). These benchmarks consisted of sections of pipe driven into the gravel with only a few inches showing above the gravel surface. This procedure was done to reduce the likelihood of the pipe being washed out or damaged by ice flows during break-up.

RESULTS

Operations

The weir was operated from 1 July through 19 September in 2003. High water in June delayed complete installation until 1 July (Figures 3 and 4). The weir was operational for less than 24 hours when a high water event on 2 July discontinued operations until 8 July. High water events in late July and August also discontinued weir operations from 28 July through 4 August, and 15 through 18 August. Weir operations were discontinued at 2100 hours on 19 September and camp closure began the following day.

The weir was relocated approximately 75 yards upstream of the 2002 location to bypass several large depressions in the river channel created during spring break-up. The weir rail was dismantled and removed from the river to prevent any damage over the winter.

Fish Passage and Escapement

Chinook Salmon

Total chinook salmon escapement in 2003 was estimated to be 4,693 fish (Table 1). A total of 975 chinook salmon were observed passing upstream through the weir and 3,718 fish (79.2%) were estimated to have passed upstream during the inoperable periods. The cumulative passage estimate for the 15 June through 7 July inoperable period was estimated from 10 radio tagged chinook salmon, 8 of which passed upstream during the inoperable period and 2 of which passed upstream during the 8 July through 20 September operational period (Figure 5, L. Stuby, ADF&G, Fairbanks, personal communication). Daily proportions from Kogrukluk River in 2003 were shifted seven days later to better match run characteristics between the two data sets, and were used to extrapolate daily passage estimates from the cumulative estimate. Estimated passage for the inoperable periods of 28 July through 4 August and 15 through 18 August were derived by the proportion method using chinook salmon passage at the Kogrukluk River weir as the model data set.

The first chinook salmon was observed on 1 July, the first day of operation, and the last chinook salmon was observed on 25 August. Based on the operational period and inclusive of estimated passage, the median passage date was 3 July and the central fifty-percent of the run occurred between 29 June and 7 July (Table 1).

Chum Salmon

Total chum salmon escapement in 2003 was estimated to be 33,666 fish (Table 2). A total of 25,005 chum salmon were observed passing upstream through the weir and 8,661 fish (25.7%) were estimated to have passed upstream during the inoperable periods. Estimated passage for the inoperable period of 15 through 20 June was derived by the extrapolation method, with chum salmon passage on the two days prior to 15 June assumed to be zero. Estimated passage for the inoperable periods of 21 June through 7 July, 28 July through 4 August, and 15 through 18 August were derived from the proportion method, using chum salmon passage at the Kwethluk River in 2003 as the model data set.

The first chum salmon was observed on 1 July, the first day of operation, and the last chum salmon was observed on 13 September. Based on the operational period and inclusive of estimated passage, the median passage date was 21 July and the central fifty-percent of the run occurred between 14 and 29 July (Table 2).

Coho Salmon

Total coho salmon escapement in 2003 was estimated to be 33,280 fish (Table 3). A total of 31,925 coho salmon were observed passing upstream through the weir and 1,355 fish (4.1%) were estimated to have passed upstream during the inoperable periods. Estimated passage for the inoperable periods of 28 July through 4 August and 15 through 18 August were derived from the proportion method, using coho salmon passage at the Kogrukluk River in 2003 as the model data set. Estimated passage for 20 September was derived from the average passage two days before 20 September.

The first coho salmon was observed on 18 July, the eighteenth day of operation, and peak daily passage of 5,659 fish occurred on 1 September. The last coho salmon was observed on 18 September, and they were still passing upstream in small numbers when the weir was dismantled on 20 September. Based on the operational period and inclusive of estimated passage, the median passage date was 27 August and the central fifty-percent of the run occurred between 21 August and 1 September (Table 3).

Other Species

Passage in 2003 also included 14 sockeye salmon, 152 pink salmon, 58 Arctic grayling, 79 whitefish, and 1 northern pike (Tables 4 and 5). A total of 3,624 longnose suckers were counted upstream through the weir during the operational period of the project (Table 6). No estimates of unobserved passage were made for these species.

Carcass Counts

Carcass counts in 2003 included 71 chinook salmon, 2,301 chum salmon and 11 coho salmon (Appendix C). The percentage of carcasses to escapement was 1.5% for chinook salmon, 6.8% for chum salmon, and 0.0% for coho salmon. Carcass counts were not made during inoperable periods in July and August.

ASL Composition of Escapement

Chinook Salmon

Scale samples, sex, and length were collected from 27 chinook salmon in 2003. Samples were collected from one pulse, which was inadequate for estimating ASL composition of total escapement. Age was determined for 23 of the 27 fish sampled (Table 7). Age composition included 2 age-1.2 fish, 4 age-1.3 fish, 13 age-1.4 fish, and 4 age-1.5 fish. Sex composition included 15 males, and 8 females. Overall, male lengths ranged from 528 to 994 mm, and female lengths ranged from 817 to 920 mm (Table 8).

Chum Salmon

Scale samples, sex, and length were collected from 640 chum salmon in 2003. Samples were collected from four pulses ranging in size from 80 to 200 fish per pulse. Age was determined for 597 of the 640 fish sampled (93.3%). The aged sample accounted for 1.8% of total escapement and was adequate for estimating ASL composition of total escapement. Total escapement was partitioned into four temporal strata based on sample dates.

Applied to total escapement, age-0.3 chum salmon was the most abundant age class (88.2%), followed by age-0.4 (10.0%), age-0.2 (1.5%) and age-0.5 (0.3%) (Table 9). Sex composition of total escapement was estimated to include 16,947 males (50.3%) and 16,719 females (49.7%). Average length by age class for males was 555 mm for age-0.3 fish, 572 mm for age-0.4 fish and 570 mm for age-0.5 fish (Table 10). The one male age-0.2 fish in the sample had a length of 424 mm. Average length by age class for females was 507 mm for age-0.2 fish, 522 mm for age-0.3 fish, and 548 mm for age-0.4 fish. No female age-0.5 fish were in the sample. Overall, male lengths ranged from 424 to 654 mm, and female lengths ranged from 449 to 620 mm.

Coho Salmon

Scale samples, sex, and length were collected from 200 coho salmon in 2003, representing one pulse for the entire run. Age was determined for 171 of the 200 fish sampled (85.5%). The aged sample accounted for 0.5% of total escapement, and was adequate for estimating ASL composition of total escapement. Total escapement was partitioned into three temporal strata based on sample dates.

Applied to total escapement, age-2.1 coho salmon was the most abundant age class (88.0%), followed by age-3.1 (11.0%), and age-1.1 (0.9%) (Table 11). Sex composition was estimated at 15,742 males (47.3%) and 17,539 females (52.7%). Average male length by age class was 554 mm for age-2.1 fish, and 553 mm for age-3.1 fish (Table 12). The one age-1.1 male fish in the sample had a length of 578 mm. Average female length by age class was 454 mm for age-1.1 fish, 560 mm for age-2.1 fish, and 568 mm for age-3.1 fish. Overall, male lengths ranged from 428 to 673 mm, and female lengths ranged from 408 to 633 mm.

Salmon Mark/Recapture

A total of 355 spaghetti tagged chum salmon were observed passing upstream through the weir in 2003, of which 220 (61.9%) were recaptured and tag numbers were recorded (Table 13). A total of 12 fish out of the 640 chum salmon examined had a secondary mark, and none of these 12 fish had lost their spaghetti tags (Kerkvliet et al. *In press*).

One spaghetti tagged sockeye salmon was observed passing upstream through the weir in 2003, and it was recaptured and its tag number was recorded (Kerkvliet et al. *In press*). This fish was the only sockeye salmon examined for secondary marks.

A total of 413 spaghetti tagged coho salmon were observed passing upstream through the weir in 2002, of which 211 (51.1%) were recaptured and tag numbers were recorded (Table 13). One fish out of the 200 coho salmon examined had a secondary mark, and this fish had not lost its spaghetti tag (Kerkvliet et al. *In press*).

A total of 10 radio tagged chinook salmon passed the weir site in 2003. Results from the radio-telemetry study will be reported separately (Stuby *In press*).

Habitat Profiling

Water temperature, air temperature and stage measurement were generally measured every morning from 10 June through 19 September (Appendix D). Water temperatures ranged from

1.5°C to 14°C, and air temperatures ranged from -7°C to 20°C. Stage measurements ranged from 41 cm to 124 cm. High water events began on 13 June, 2 July, 28 July, and 15 August.

DISCUSSION

Operations

The weir design used on George River has evolved over the years in response to various challenges. The goal has been reliable assessment of the salmon populations with minimal down time. The optimal weir design needs a quick recovery following inevitable inoperable periods, mostly caused by high water events. High water events in 2003 proved problematic towards weir installation and consistent operations. The resistance board weir design currently used at George River was able to withstand repeated high water events and was quickly returned to operation once water levels receded. The weir was operational for most of the season during a year which would have prevented operation of the older fixed weir design.

As in past years, water turbidity challenged weir operations in 2003, and this challenge was amplified by the frequency and duration of high and turbid water events throughout the season. Fish identification became difficult when water levels increased because of the concurrent decrease in water clarity. The design of the fish trap introduced with the resistance board weir in 1999 addressed this challenge, but proved inadequate at river stages in excess 100 cm. A larger counting chute with a longer ramp would reduce this limitation, and such a design is currently under construction for use in the 2004 season.

The current weir design allowed for operation for most of the season, but effective operation includes more than just optimizing the structural components. The purpose for operating weirs is to provide a reliable assessment of salmon populations, which in turn will aid in salmon management. Spawning Pacific salmon have limited energy stores during the culmination of their life cycle; therefore, the activities we undertake to monitor these fish should not interfere with their successful spawning. Individuals charged with design and operation of weirs need to recognize conditions that threaten the well being of fish populations, and take actions to safeguard them. For example, when the George River weir was inoperable because of high water conditions, the crew was instructed to leave the fish passage gates open to avoid impeding fish migration. In addition, when fish displayed hesitancy in passing through the weir, crews were instructed to open additional sections of the weir to encourage fish passage, to pass fish at any time of the day or night fish appeared motivated to move, and to forgo collecting biological samples and tagged fish if the added stress appeared detrimental to fish passage. Our purpose is reliable escapement assessment to improve salmon management; part of that purpose includes operating projects in a manner that ensures the well being of the fish we are mandated to protect.

Fish Passage and Escapement

Chinook Salmon

Total Escapement. Chinook salmon escapement in 2003 of 4,693 fish was intermediate to the higher escapements seen in 1996 and 1997 and the lower escapements seen in 2000 and 2002 (Figures 5. and 6). Since 1997, known chinook salmon escapement to the George River was on a downward trend. Although not a dramatic increase, escapement in 2003 appears to have halted this trend.

Currently, no formal escapement goals exist for George River chinook salmon to serve as a benchmark for assessing adequacy of escapements. Therefore, we must make an assessment by comparison with other abundance indicators, particularly those few tributaries with formal escapement goals (Figures 7 and 8). Overall, chinook salmon escapements in 2003 were considered above average in the Kuskokwim River drainage. Escapement goals were achieved at Kogrukluk River and at most aerial survey streams, and the chinook salmon aerial index goal was second highest in over a decade. In contrast, 1999 and 2000 were considered especially poor years for chinook salmon escapement in the Kuskokwim River drainage, consistent with escapements to George River. The 1999 and 2000 escapements for Kogrukluk River and for aerial survey streams were half to a third of goals. In 2001 and 2002, chinook salmon escapements began to improve throughout most of the Kuskokwim River drainage; however, George River was an exception to this trend. George River escapements were low in 1999 and 2000, and continued to remain low through 2002. The increased escapement in 2003 is encouraging compared to recent years at George River, but this increase is disproportional to the comparatively larger increases seen elsewhere in the Kuskokwim River drainage.

The number of chinook salmon seen in the George River is influenced by the harvest activity in the mainstem Kuskokwim River (Ward et al. 2003). Chinook salmon are perhaps the most important salmon species for subsistence fishers in the Kuskokwim River. The ten-year average annual subsistence harvest from 1992 through 2001 of 78,198 chinook salmon is more than any other salmon species, and the trend has been stable for more than a decade. The directed commercial harvest of chinook salmon was discontinued in 1987 in response to a prolonged period of low chinook salmon runs, and in recognition of the subsistence priority for harvesting whatever surplus existed over escapement needs. An incidental harvest of chinook salmon continued in the chum salmon directed commercial fishery, and the average annual incidental commercial harvest from 1992 through 2001 was 14,312 fish. Decreased commercial harvests from 1993 through 2000 are reflective of low escapements in certain years, conservation measures directed at chum salmon, and limits in the commercial salmon markets. Decreased harvests led the Board to classify Kuskokwim River chinook salmon as a yield concern in September 2000 (5AAC 39.222; Burkey et al 2000a). Kuskokwim River chinook salmon abundance was considered average to above average in 2002 and 2003; however, the Board continued the yield concern classification in January 2004 because there has been a chronic inability to maintain near average yields despite specific management actions taken annually (Bergstrom and Whitmore 2004). Decreased commercial harvests since 2001 are reflective of the Kuskokwim River rebuilding plan and continued limitations in commercial salmon markets.

Inherent in the establishment of a rebuilding plan is the need for benchmarks that define what the planners are trying to achieve and some means of measuring success. Escapement goals provide such a measure, but the George River does not have a chinook salmon escapement goal. Recent deliberations on establishing escapement goals in the George River resulted in inaction because of inadequate historical escapement information (ADF&G 2004). This lack of information reinforces the need for continued escapement monitoring of George River chinook salmon.

Passage Estimates. In accordance with project objectives, chinook salmon passage was estimated for inoperable periods in 2003 to determine total chinook salmon escapement from 15 June through 20 September (Table 1, Figure 5). The Kuskokwim River chinook salmon radio telemetry project (Stuby *In press)* presented an opportunity to utilize radio tagged chinook salmon for generating a reasonable estimate of missed chinook salmon passage. It could be argued that the estimate is speculative because of the low number of radio tagged fish and because it represents 75.0% of observed passage; but the methodology used for the escapement estimate is not far removed from the methodology used for the radio telemetry total run estimate. The proportion method was used to generate estimates for the remaining inoperable periods at George River weir, and daily passage proportions at Kogrukluk River weir were again used as the model data set. The remaining estimate is believed to be a reasonable approximation of chinook salmon passage during these inoperable periods because it represents a small percentage of observed passage (5.7%), and because these inoperable periods occurred late in the chinook salmon run.

Run Timing. Chinook salmon run timing in 2003 was most similar to 1996 and earlier overall than 1999 through 2002 (Table 1, Figure 9). Chinook salmon run timing was earlier overall than chum and coho salmon in the George River, but the inter-annual run timing pattern between these species varied. For example, in 2003 chinook salmon run timing was early, but chum salmon were late, and coho salmon were intermediate.

Chum Salmon

Total Escapement. Chum salmon escapement in 2003 of 33,666 fish was higher than any subsequent year in which escapement was determined (Figures 3 and 6). Escapement in 2003 was approximately 1.7 times higher than the next highest escapement of 19,393 fish in 1996 and almost 10 times higher than the lowest escapement of 3,492 fish in 2000.

Currently, no formal escapement goals exist for George River chum salmon to serve as a benchmark for assessing the adequacy of escapements; therefore, we are left with making an assessment by comparison with other abundance indicators, particularly those few tributaries with escapement goals (Figure 10). The years 1997, 1999 and 2000 were considered especially poor for chum salmon escapements (Burkey et al 2000b). In all three of these years, escapements to Kogrukluk River were less than half the escapement goal, and in 1999 and 2000 passage at Aniak River sonar fell short of the escapement goal. At George River, chum salmon escapements were low in 1997 and 2000, but near average in 1999. Chum salmon escapements improved in 2001 and 2002 throughout most of the Kuskokwim River drainage and were mixed in 2003. Kwethluk River received the highest chum salmon escapement on record in 2003, and Aniak River had the second highest chum salmon index in over a decade. In contrast, the escapement goal was not met at Kogrukluk River and chum salmon escapements to the Tuluksak and Takotna Rivers were intermediate compared to historical data. The record high escapement to George River in 2003 places it in the high end of these mixed results and bodes well for continued improvement in George River chum salmon escapements.

The level of chum salmon escapement seen in the George River is influenced by harvest activity in the mainstem Kuskokwim River. Over ninety percent of subsistence harvest and all commercial harvest occurs downstream of the George River confluence. Subsistence harvest levels for chum salmon have generally declined over the past few decades, but this species continues to be an important food source for subsistence users. The ten-year average annual subsistence harvest from 1992 through 2001 includes 61,788 chum salmon, which ranks second only to chinook salmon in numbers of fish harvested (Ward et al. 2003). The commercial fishery that typically operates on the lower Kuskokwim River in June and July has a ten-year average annual harvest from 1992 through 2001 of 173,353 chum salmon. The commercial harvest has waned since the late 1980s because of low run sizes and decreasing market interest in the species. The especially low commercial harvests in 1993, 1997, and in 1999 through 2000, were driven by low run sizes (Burkey et al. 2000b). Decreased harvests led the Board to classify Kuskokwim River chum salmon as a yield concern in September 2000 (5AAC 39.222; Burkey et al. 2000a,). Kuskokwim River chum salmon abundance was considered above average in 2002 and 2003; however, the Board continued the yield concern classification in January 2004 because there has been a chronic inability to maintain near average yields despite specific management actions taken annually (Bergstrom and Whitmore 2004). Decreased commercial harvests since 2001 are reflective of the Kuskokwim River rebuilding plan and continued limitations in commercial salmon markets.

The rebuilding plan brought attention to the need for establishing benchmarks that better defined what managers were trying to achieve, and that provided some measure of assessing success. Escapement goals provide such a measure, but George River does not have a chum salmon escapement goal. Recent deliberations on establishing escapement goals in George River resulted in inaction because of inadequate historical escapement information (ADF&G 2004). This lack of information reinforces the need for continued escapement monitoring of George River chum salmon.

Passage Estimates. In accordance with project objectives, chum salmon passage was estimated for the inoperable periods in 2003 to determine total chum salmon escapement from 15 June through 20 September (Table 2, Figure 3). Estimated passage accounted for 25.7% of total chum salmon escapement, and is believed to be a reasonable approximation of unobserved chum salmon passage. Most of the estimate was derived using the proportion method with chum salmon passage at the Kwethluk River weir in 2003 used as the model data set. This model data set was used because chum salmon passage observed during the operational period at George River was similar to passage at Kwethluk River during the same period based on linear regression analysis ($R^2 = 81.9$, Figure 11).

Run Timing. Chum salmon run timing in 2003 was the latest on record, in part because of the protracted nature of the large escapement (Table 2, Figure 9). Chum salmon run timing was intermediate overall to chinook and coho salmon in the George River, but the inter-annual run timing pattern between these species varied. For example, in 2003 chinook salmon run timing was early, but chum salmon were late and coho salmon were intermediate.

Coho Salmon

Total Escapement. Coho salmon escapement in 2003 of 33,280 fish was higher than any subsequent year in which escapement was determined (Figures 4 and 6). Escapement in 2003 was approximately 2.3 times higher than the next highest escapement of 14,398 fish in 2001 and almost 5 times higher than the lowest escapement of 6,759 fish in 2002.

Similar to chinook and chum salmon, no formal escapement goal exists for George River coho salmon. Escapements can only be assessed through comparisons to other projects which have coho salmon escapement goals, specifically the Kogrukluk River. In 2003, coho salmon escapements throughout the Kuskokwim River drainage were the highest on record and Kogrukluk River coho salmon escapement exceeded the escapement goal by almost 50,000 fish (Figure 12). In past years, coho salmon escapement trends at George River were dissimilar to trends seen elsewhere in the Kuskokwim River drainage. The record escapement seen at George River was similar to record escapements seen at other Kuskokwim River tributaries in 2003.

The level of coho salmon escapement seen in the George River is influenced by harvest activity in the mainstem Kuskokwim River. Over eighty five percent of coho salmon subsistence harvest, and all commercial harvest occurs downstream of the George River confluence. The ten-year average of annual subsistence harvest in the Kuskokwim River from 1992 through 2001 includes 31,035 coho salmon, which is third behind chinook and chum salmon harvests (Ward et al. 2003). Subsistence harvest of coho salmon has generally declined over the past decade, but has slightly increased since 1999. Most of the annual coho salmon harvest occurs in the commercial fishery operated on the lower Kuskokwim River in late July and August. The ten-year average of annual commercial harvest from 1992 through 2001 includes 410,980 fish, higher than any other salmon species. Annual harvests have sharply declined since the 1996 peak of 930,131 fish largely because of low run sizes.

The relatively high volume of coho salmon harvested in the commercial fishery, coupled with the price paid per pound, makes coho salmon the most valuable species for Kuskokwim River commercial fishers (Ward et al. 2003). This value has been further amplified as the chum salmon directed commercial fishery has not occurred since 2001 because of reduced processor capacity, and in recognition of the chum and chinook salmon rebuilding plan. It is important to note the sale of coho salmon helps support subsistence activities pursued by commercial fishers and their families.

Passage Estimates. In accordance with project objectives, coho salmon passage was estimated for the inoperable periods in 2003 to determine total coho salmon escapement from 15 June through 20 September (Table 3, Figure 4). Estimated passage accounted for 4.1% of the total escapement and is believed to be a reasonable approximation of unobserved coho salmon passage, in part because it represents such a small percentage of the total escapement.

Run Timing. Chum salmon run timing in 2003 was most similar to 1997, earlier overall than 1999 and 2002, and later overall than 200 and 2001 (Table 3, Figure 9). Coho salmon run timing was later overall than chum and coho salmon in the George River, but the inter-annual run timing pattern between these species varied. For example, in 2003 chinook salmon run timing was early, but chum salmon were late, and coho salmon were intermediate.

Other Species

Other salmon species observed in George River in 2003 included small numbers of sockeye and pink salmon (Table 4). The highest observed passage of sockeye salmon was 445 fish in 1997 and highest observed passage of pink salmon was 644 fish in 1996. The low escapements reported for sockeye and pink salmon in 2003 are not unusual because George River is not considered a primary spawning tributary for these species; and therefore, no estimates of unobserved passage were made for these species.

Small numbers of whitefish were observed passing upstream through the weir in some years, the highest passage of 192 fish was recorded in 2002 (Table 5). No passage estimates were made for this species and observed whitefish passage is incomplete because most species of whitefish can freely pass through the weir.

Small numbers of northern pike, Arctic grayling, and char were observed passing upstream through the weir in some years (Table 5). These fish were thought to be resident species. No passage estimates were made for this species and most of these fish, especially Arctic Grayling, were small enough to pass through weir panel pickets.

Longnose suckers are the most abundant non-salmon species counted through the George River weir. The highest recorded passage of 15,840 fish occurred in 2001 (Table 6). However, abundance estimates in 2003 and other years are incomplete because upstream migration of this species starts before the beginning of weir operations. Currently, no method exists for determining the degree of unobserved longnose sucker passage before 15 June; therefore, no estimates of unobserved passage were made. In late July and early August, longnose suckers migrated downstream at the end of their spawning period. Most suckers were small enough to pass through spaces between weir panel pickets, but some fish were not. Passage chutes were incorporated into the weir to accommodate downstream sucker migration. Additionally, timing of downstream sucker migration often coincided with periods of high water, and complete submergence of weir panels during high water events facilitated downstream sucker migration. Longnose suckers have been reported as common in the Aniak, Tatlawiksuk, and Takotna Rivers, but they appear to be uncommon or absent from the Kwethluk, Tuluksak, and Kogrukluk Rivers.

Carcass Counts

The use of carcass counts for estimating "stream life" of chinook and chum salmon has been abandoned because this analysis is believed unreliable (Linderman et al. 2003a and 2003b). The frequency and duration of high water events in 2003 likely reduced the number of observable carcasses at the weir because they could freely flow over submerged weir panels. This low carcass number is evidenced by reduced chum salmon carcass to escapement percentage in 2003 compared to previous years, even though chum salmon escapement was the highest on record in 2003 (Appendix C). This low percentage reinforces the conclusion stream life estimates from carcass counts are unreliable because of the small percentage of carcasses to escapement, annual variability of carcass to escapement percentages, and potential biases in sex ratios between carcasses and escapement. The small percentage of carcasses at the weir has positive ramifications for aerial stream surveys because most observable spawning salmon and their carcasses reside upstream of the river's first four miles when surveys are typically flown. Another benefit is protracted retention of carcasses on the spawning grounds enhances absorption of marine derived nutrients within George River (Cederholm et al. 1999, Cederholm et al. 2000).

ASL Composition of Escapement

For the purposes of this report, the authors will focus on describing trends seen within the George River data set coupled with broad reference to the generalized historical trends described in DuBois and Molyneaux (2000) and unpublished Kuskokwim River ASL data for the years 2000 through 2003 (Folletti 2004). Probably the greatest value in collecting ASL information is for future development of spawner-recruit models used for establishing escapement goals (e.g., Clark and Sandone 2001). The information can also be used for forecasting future runs, and to illustrate long-term trends in ASL composition (for example, Bigler et al. 1996)

Chinook Salmon

Sample Collection. Chinook salmon samples were not adequate for generating ASL composition of escapement estimates in 2003 (Table 7 and 8). The late start date and inoperable periods in 2003 resulted in an inadequate number of chinook salmon samples in terms of temporal representation of the run and overall quantity of samples.

Summary. Although ASL composition of escapement estimates were not generated in 2003, some comparisons can be made based on collected samples. Age-1.4 was dominant in the 2003 samples, similar to past years at George River (Table 7). Based on historical ASL data from other Kuskokwim River escapement projects, a dissimilar trend was seen in other chinook salmon populations. In general, annual percentages of age-1.4 chinook salmon in these populations were dictated by annual fluctuations in the percentages of other age classes. Additionally, most other Kuskokwim River chinook salmon populations consistently showed more overall chinook salmon age classes than those from George River (Folletti 2004).

Males were dominant in the 2003 samples, as was the case in previous years when ASL composition of chinook salmon escapement was determined. (Table 7, Figure 13). Based on all years at George River, the pooled average percentage of male fish was 59.6%, and the pooled average percentage of female fish was 40.4%. Similar trends are seen in other Kuskokwim River chinook salmon populations: male chinook salmon percentages fluctuate between 60% and 70%, and female chinook salmon percentages fluctuate between 30% and 40% (Folletti 2004).

Although the 2003 George River samples were not temporally stratified, they exhibit length partitioning by age class similar to previous years (Figure 14). The pooled average length of age-1.3, -1.4 and -1.5 female fish for all years was 760 mm, 849 mm and 890 mm, and the pooled average length of age-1.2, -1.3, -1.4 and -1.5 male fish for all years was 550 mm, 730 mm, 837 mm and 927 mm respectively. Female fish have been shown to be larger than males historically, but the small sample size in 2003 makes this comparison inconclusive. Similar length composition trends exist in other Kuskokwim River chinook salmon populations, and length partitioning by age class is evident in these populations (Folletti 2004). Additionally, female chinook salmon from these populations were consistently larger than males of the same age class.

Chum Salmon

Sample Collection. Chum salmon samples were adequate for generating ASL composition of escapement estimates in 2003 (Tables 9 and 10). Sample criteria was achieved for most of the chum salmon run, although a small proportion of the run may not be represented during late June and early July because of late start-up and inoperable periods.

Summary. The percentage of younger aged chum salmon increased as the 2003 run progressed, consistent with previous years at George River (Figure 15). This trend is also evident in historical ASL data from other Kuskokwim River chum salmon populations. Of particular interest is the high percentage of age-0.3 fish (88.2%) at George River in 2003. The percentage of age-0.3 fish in 2003 was higher than most of previous years at George River, which ranged from 46.3% to 66.3%. Results from George River in 1998 are excluded from this comparison because ASL and escapement data were incomplete, however, available 1998 ASL data indicates a high percentage of age-0.3 fish (82.6%), and most closely resembles 2003 data. Additionally, results from most of other Kuskokwim River projects in 2003 showed percentages of age-0.3 chum salmon similar to George River, the one exception being Kogrukluk River (Folletti 2004). The high percentage of age-0.3 chum salmon in 2003 indicates good returns of age-0.4 chum salmon in 2004.

From 1996 through 1997 and 2000 through 2002, the percentage of female fish consistently increased as their runs progressed in the George River (Figure 13). Results in 2003 are inconsistent with this trend; however, this inconsistency may be a function of small sample size in the last stratified sample (Table 9). Disregarding this stratum, the percentage of females did increase slightly over time. Based on historical ASL data from other Kuskokwim River escapement projects, a general trend of increasing female percentage over time exists in other Kuskokwim River chum salmon populations (Folletti 2004). A consistent exception to this trend is Kogrukluk River, which exhibits chum salmon sex compositions dissimilar to trends seen elsewhere in the

Kuskokwim River drainage.

In 2003, age-0.3 and -0.4 fish exhibited length partitioning, and male chum salmon tended to be larger than females in George River (Figure 16). Mean lengths in 2003 were 555 mm for age-0.3 males, 572mm for age-0.4 males, 522mm for age-0.3 females, and 548mm for age-0.4 females. These trends were consistent with previous years at George River. Based on historical ASL data from other Kuskokwim River escapement projects, similar trends exist in other chum salmon populations (Folletti 2004). Kuskokwim River chum salmon populations consistently exhibited length partitioning of age-0.3 and -0.4 fish, and males were consistently larger than females.

Coho Salmon

Sample Collection. Kuskokwim River coho salmon sample collection was modified in 2003 to a total run sample design; the primary result was a reduction in total number of samples. In past years, the pulse sample goal was 170 fish per pulse - each representing a third of the coho salmon run, and resulting in a total run sample size of 510 fish. In 2003, the pulse sample goal was replaced by a total run sample goal of 170 fish divided equally between three pulses - each representing a third of the run. Historical consistency in Kuskokwim River coho salmon ASL trends allowed for sample reduction without sacrificing the utility of ASL composition estimates in describing annual ASL trends. Comparisons between total run sample design results and historical sample design results are described in the following summary and indicate similar trends in coho salmon ASL composition between the two designs.

Additionally, inoperable periods caused by high water events are common during late summer when the coho salmon run occurs; in turn, collecting an adequate number of coho salmon samples has been problematic in certain years. Reducing the number of samples required will aid in consistently achieving sample goals because sample crews can collect an adequate number of coho salmon samples faster within broader windows of opportunity.

Summary. In 2003, age-2.1 coho salmon (88.0%) was the dominant age class in George River (Table 11). This trend is consistent with historical trends at George River when the percentage of age-2.1 coho salmon fluctuated between highs in the mid to upper 90% in 1997 and 2000, and lows in the mid to upper 60% in 1999 and 2001 (Figure 15). Based on ASL data from other Kuskokwim River escapement projects in 2003 and historically, the trend of age-2.1 coho salmon dominance exists in other Kuskokwim River coho salmon populations (Folletti 2004).

In 2003, the percentages of male to female coho salmon remained close to a 50%-50% split in George River (Figure 13). Historical ASL data from George River and other Kuskokwim River escapement projects indicates a similar trend in male to female percentages. The percentage of females at George River increased from 42.0% to 52.7% as the run progressed in 2003. Similar results were seen at other Kuskokwim River escapement projects in 2003, the one exception being Tuluksak River weir. It could be argued that increasing percentage of females over time in 2003 is an artifact of smaller sample size; however, visual sexing of coho salmon passage at Kogrukluk River weir indicates an increase in female percentage over time similar to the increase seen in the ASL estimates (Figure 17, Sheldon et al. 2004). Historical data at other

Kuskokwim River escapement projects indicates relatively constant female percentages over time in some years and large increases in female percentage over time in others (Folletti 2004).

In 2003, male and female coho salmon lengths remained relatively constant as runs progressed in the George River (Figure 18). Additionally, male coho salmon length ranges were similar to female length ranges (Table 12). Age-1.1 fish were excluded from this comparison because of the small number of samples collected. Coho salmon length statistics from other Kuskokwim River escapement projects in 2003 indicated similar trends in coho salmon length composition over time, and male and female length ranges (Folletti 2004). Additionally, trends in coho salmon length statistics in 2003 were consistent with historic trends seen at the George River and within other Kuskokwim River coho salmon populations.

Mark/Recapture Tag-Recovery

Findings of the salmon mark/recapture tagging and radio-telemetry projects in 2003 are discussed in detail by Kerkvliet et al. (*In press*) and Stuby (*In press*). Recoveries of spaghetti tagged chum and coho salmon at George River weir and other weir projects were hampered by high and turbid water conditions throughout the summer, but sufficient recoveries were obtained to generate swim speed and stock specific run timing estimates. This report will summarize findings pertinent to the George River, with an emphasis on findings derived from chum and coho salmon spaghetti tags in 2003.

Chum Salmon

Daily observed and recovered tags at the weir were similar to each other and were well distributed throughout most of the chum salmon run, one exception was during an inoperable period in late July and early August (Figures 19 and 20). Distribution of recovered tags indicates they were representative of the chum salmon observed returning to George River; however, the late July inoperable period caused cumulative percentage curves for observed and recovered tags to come in earlier than escapement beyond the median fish passage date.

Recovery of the numbered spaghetti tags provided an opportunity to examine the distribution of tagged George River chum salmon relative to the total chum salmon catch at the Kalskag-Aniak tagging site, and allowed for an examination of the transit time and swimming speed of these fish between the tagging site and the weir. Chum salmon tags recovered at George River were not well distributed throughout the total chum salmon catch at the Kalskag-Aniak tagging site (Figure 21). These findings indicate most of chum salmon migrating to George River were caught during the first half of the total chum catch. Transit time from the tagging site to the weir ranged from 3 to 28 days with a mean transit time of 7 days, and mean swim speed was 27 km per day (Kerkvliet et al. *In press*). These results were similar to George River chum salmon transit time and swim speed estimates in 2002 (Linderman et al. 2003a).

Recovery of the numbered chum salmon spaghetti tags provided information about run timing of specific spawning populations passing the Kalskag-Aniak tagging site. Tag recoveries from four tributary escapement projects including Aniak River sonar, and the George, Kogrukluk, and Takotna River weirs suggest a distinct difference in run timing between these tributary populations as they passed the Kalskag-Aniak tagging site. Run timing was progressively earlier at the Kalskag-Aniak site the farther upstream each spawning tributary was located (Figure 22). The general progression, from earliest to latest, was Takotna River, Kogrukluk River, George River, and Aniak River. Median passage dates between the Takotna and Aniak Rivers spanned 15 days. These results were similar to run timing estimates in 2002, although the time span between median tag passage dates at the Takotna and Aniak Rivers was reduced from 24 days in 2002 to 15 days in 2003 (Linderman et al. 2003a). Knowledge of the difference in run timing between spawning populations is a fundamental insight necessary for managing fisheries to ensure escapement goals are met.

Of the 640 chum salmon examined for secondary marks at George River, no untagged fish were found to have a secondary mark, indicating any tag loss was minimal. Similar findings were reported at the other tributary escapement projects (C. Kerkvliet, ADF&G, Anchorage, personal communication).

Coho Salmon

Daily and observed coho salmon tags were dissimilar to each other and recovered tags were not well distributed throughout the coho run (Figures 19 and 20). Most tags were recovered after 30% of the coho salmon run had occurred, and 132 (42.0%) tags were not recovered on 1 and 2 September because attempting to recapture such a large number of tags might add undo stress to the population. High and turbid water conditions in mid-August also hampered recovery efforts for a brief period. The reduced number of recaptured to observed tags resulted in a less accurate representation of coho escapement, however, a sufficient number of tags were recovered to generate mainstem river travel and run timing estimates for George River coho salmon.

Similar to chum salmon, recovery of numbered spaghetti tags provided an opportunity to examine distribution of tagged George River coho salmon relative to total coho salmon catch at the Kalskag-Aniak tagging site, and allowed for an examination of transit time and swim speed of these fish between the tagging site and the weir. Coho salmon tags recovered at George River were well distributed over the total chum salmon catch at the Kalskag-Aniak tagging site (Figure 21). This finding indicates coho salmon migrating to George River were well represented by the tagging project, and recovered tags may represent coho passage at the weir better than what the recovered tags to weir passage comparison suggests. Travel time for these fish from the tagging site to the weir ranged from 4 to 35 days with a mean travel time of 14 days, and mean swim speed was 14 km per day (Kerkvliet et al. *In press*). These results were similar to George River coho salmon transit time and swim speed estimates in 2002 (Linderman et al. 2003a).

Recovery of the numbered coho salmon spaghetti tags also provided information about run timing of specific spawning populations passing the Kalskag-Aniak tagging site. Tag recoveries from three tributary escapement projects including the George, Kogrukluk and Takotna River weirs suggest a distinct difference in run timing between spawning populations of these tributaries as they passed the Kalskag-Aniak tagging site (Figure 22). The general progression from earliest to latest was Takotna River, Kogrukluk River, and George River. Run timing was progressively earlier the farther upstream these spawning tributaries were located. Results were similar in 2002; however, Tatlawiksuk River coho run timing was in earlier than Kogrukluk River in 2002, even though it is closer to the tagging site. A similar comparison could not be made in 2003 because of the premature termination of operations at Tatlawiksuk River weir (Linderman et al. 2004).

Of the 200 coho salmon examined for secondary marks at George River, no untagged fish were found to have a secondary mark indicating tag loss was minimal. Similar findings were reported at the other tributary escapement projects (C. Kerkvliet, ADF&G, Anchorage, personal communication).

Habitat Profiling

Water temperatures ranged from 1.5 °C to 14 °C in 2003, and air temperature ranged from -7 °C to 20 °C (Appendix D). Compared to previous years at George River, temperatures were colder on average in 2003, although in some years temperature measurements were not recorded for the entire targeted operational period. Fluctuations in temperature did not appear to coincide with fluctuations in fish passage, consistent with previous years at George River.

River stage ranged from 41 cm to 124 cm in 2003. Some moderate to large increases in daily chinook, chum, and coho salmon passage coincide with increasing river stage (Figures 3, 4, and 5). This coincidence was more pronounced with coho salmon in 2003, and is consistent with previous years at George River.

The two water stage benchmarks were established at George River in 1998, and remained operable through 2003 (Appendix B). The benchmarks are not permanent structures and instability of the bank along the camp side of the river prevents the possibility of a permanent link to the benchmarks. These benchmarks will have to be evaluated and maintained annually to ensure success in comparing water levels.

CONCLUSIONS

1) Operations at George River weir in 2003 show the resistance board weir allows for reasonable success in achieving project objectives during a year of protracted high water and inoperable periods.

2) Total escapements of chinook, chum and coho salmon at the George River weir project in 2003:
    a) Indicate an increase in chinook salmon escapement over the previous trend of declining escapements, although the increase was in contrast to the overall above average chinook salmon escapements seen elsewhere in the Kuskokwim River, and
    b) Indicate the highest chum salmon escapement on record during a year when Kuskokwim River chum salmon escapements were mixed between record highs and average escapement, and
    c) Indicate the highest coho salmon escapement on record, consistent with record coho salmon escapements seen elsewhere in the Kuskokwim River in 2003.

3) The ASL data collected at the George River weir project in 2003:
    a) Indicate trends similar to ASL data of Kuskokwim River salmon stocks, both in 2003 and historically, and
    b) Indicate the change in coho salmon sampling design has not reduced the utility of ASL composition estimates for describing trends in coho salmon ASL composition, and design change will aid in successful achievement of sample goals.

4) The mark-recapture tag data collected at the George River weir in 2003:
    a) Allow for estimation of unobserved chinook salmon passage from radio tagged chinook salmon passage data during inoperable periods, and
    b) Indicate travel time and travel speed of chum and coho salmon from the tagging sites, and shown them to be similar to results 2002, and
    c) Indicate run timing separations between chum and coho salmon spawning populations based on spawning tributary location within the Kuskokwim River drainage, consistent with the run timing separations observed in 2002.

5) The habitat profile data collected at the George River weir project allow for comparative water levels between years and enabled better assessment of weir performance.

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TABLES

Table 1. Historical passage of chinook salmon at George River weir.

Date	Daily Passage								Cumulative Passage								Percent Passage						
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1999	2000	2001	2002	2003
6/15	23 b	26	c	0 b	0 b	0 b	0 b	1 b	23	26		0	0	0	0	1	0	0	0	0	0	0	0
6/16	11 b	13 a	c	0 b	0 b	0 b	0 b	0 b	34	39		0	0	0	0	1	0	0	0	0	0	0	0
6/17	10 b	11	c	0 b	0 e	0 b	0 b	0 b	44	50		0	0	0	0	1	1	1	0	0	0	0	0
6/18	7 b	8	c	0 b	0	0 b	0 b	4 b	51	58		0	0	0	0	5	1	1	0	0	0	0	0
6/19	37 b	42	c	0 b	0	0 b	0 b	3 b	88	100		0	0	0	0	8	1	1	0	0	0	0	0
6/20	0 b	0	c	0 b	0	0 b	0 b	14 b	88	100		0	0	0	0	22	1	1	0	0	0	0	0
6/21	27	17	c	0 b	0	0 b	3 e	24 b	115	117		0	0	0	3	46	1	1	0	0	0	0	1
6/22	17	18	1 d	0 b	2	2 b	55	30 b	132	135	1	0	2	2	58	76	2	2	0	0	0	2	2
6/23	269	362	3	9 b	10	11 b	40	44 b	401	497	4	9	12	13	98	120	5	6	0	0	0	4	3
6/24	762	488	4	5 b	11	12 b	5	10 b	1,163	985	8	14	23	25	103	130	15	13	0	1	1	4	3
6/25	214	907	14	5 b	5	6 e	8	163 b	1,377	1,892	22	19	28	31	111	293	18	24	1	1	1	5	6
6/26	41	288	44	14 b	1	15	30	206 b	1,418	2,180	66	33	29	46	141	499	18	28	1	1	1	6	11
6/27	183	514	35	9 b	120	16	24	137 b	1,601	2,694	101	43	149	62	165	636	21	34	1	5	2	7	14
6/28	98	397	170	33 b	0	100	43	245 b	1,699	3,091	271	76	149	162	208	881	22	40	2	5	5	9	19
6/29	91 a	566	126	12 b	8	305	24	271 b	1,790	3,657	397	88	157	467	232	1,152	23	47	2	5	14	9	25
6/30	84	767	164	5 b	8	15	420	286 b	1,874	4,424	561	93	165	482	652	1,438	24	57	3	6	15	27	31
7/01	1,034	456	288	38 b	63	43	366	354 e	2,908	4,880	849	131	228	525	1,018	1,792	38	62	4	8	16	42	38
7/02	712 a	277	397	12 b	416	163	23	513 e	3,619	5,157	1,246	142	644	688	1,041	2,305	47	66	4	22	21	43	49
7/03	389	584	428	31 b	115	8	107	336 b	4,008	5,741	1,674	173	759	696	1,148	2,641	52	73	5	26	21	47	56
7/04	320	347	287	62 b	69	36	39	42 b	4,328	6,088	1,961	235	828	732	1,187	2,684	56	78	7	28	22	49	57
7/05	280	221	245	33 b	48	32	102	360 b	4,608	6,309	2,206	268	876	764	1,289	3,044	60	81	8	30	23	53	65
7/06	579	294	203	36 b	51	531	92	213 b	5,187	6,603	2,409	304	927	1,295	1,381	3,257	67	84	9	31	39	57	69
7/07	180	93	33 d	33 b	231	246	138	455 b	5,367	6,696	2,442	337	1,158	1,541	1,519	3,712	70	86	10	39	47	62	79
7/08	122	34	c	31 b	137	36	127	117	5,489	6,730		368	1,295	1,577	1,646	3,829	71	86	10	44	48	67	82
7/09	436	37	c	50 b	81	70	80	65	5,925	6,767		418	1,376	1,647	1,726	3,894	77	87	12	46	50	71	83
7/10	127	29	c	95 b	15	155	22	17	6,052	6,796		513	1,391	1,802	1,748	3,911	78	87	14	47	54	72	83
7/11	376	33	c	188 b	495	64	142	5	6,428	6,829		701	1,886	1,866	1,890	3,916	83	87	20	64	56	77	83
7/12	53	245	c	280 b	116	610	37	40	6,481	7,074		981	2,002	2,476	1,927	3,956	84	90	28	68	75	79	84
7/13	60	31	c	128 b	10	57	55	59	6,541	7,105		1,109	2,012	2,533	1,982	4,015	85	91	31	68	77	81	86
7/14	127	11	c	68	22	113	74	40	6,668	7,116		1,177	2,034	2,646	2,056	4,055	86	91	33	69	80	84	86
7/15	324	65	c	206	17	86	29	90	6,992	7,181		1,383	2,051	2,732	2,085	4,145	91	92	39	69	83	85	88
7/16	78	6	c	185	146	26	35	11	7,070	7,187		1,568	2,197	2,758	2,120	4,156	92	92	44	74	83	87	89
7/17	67	22	c	21	104	45	42	38	7,137	7,209		1,589	2,301	2,803	2,162	4,194	92	92	45	78	85	88	89
7/18	107	42	c	58	13	97	22	47	7,244	7,251		1,647	2,314	2,900	2,184	4,241	94	93	46	78	88	89	90
7/19	63	87	c	260	219	41	25	72	7,307	7,338		1,907	2,533	2,941	2,209	4,313	95	94	54	85	89	90	92
7/20	49	111	c	456	9	88	29	50	7,356	7,449		2,363	2,542	3,029	2,238	4,363	95	95	67	86	92	92	93
7/21	58	83	c	43	13	34	27	90	7,414	7,532		2,406	2,555	3,063	2,265	4,453	96	96	68	86	93	93	95
7/22	26	49	c	196	41	46	25	12	7,440	7,581		2,602	2,596	3,109	2,290	4,465	96	97	73	88	94	94	95
7/23	29	32	c	61	87	17	9	25	7,469	7,613		2,663	2,683	3,126	2,299	4,490	97	97	75	91	94	94	96
7/24	54	7	c	161	22	4	18	13	7,523	7,620		2,824	2,705	3,130	2,317	4,503	97	97	80	91	95	95	96
7/25	34	41	c	203	25	12	6	18	7,557	7,661		3,027	2,730	3,142	2,323	4,521	98	98	85	92	95	95	96
7/26	17	18	c	159	34	14	11	5	7,574	7,679		3,186	2,764	3,156	2,334	4,526	98	98	90	93	95	95	96
7/27	9 b	9	c	37	43	16	19	39	7,583	7,688		3,223	2,807	3,172	2,353	4,565	98	98	91	95	96	96	97
7/28	25 b	25	c	58	10	28	15	11 b	7,608	7,713		3,281	2,817	3,200	2,368	4,576	99	99	92	95	97	97	98
7/29	7 b	7	c	47	11	17	7	9 b	7,615	7,720		3,328	2,828	3,217	2,375	4,585	99	99	94	96	97	97	98
7/30	13 b	13	18	19	5	5	15	9 b	7,628	7,733	2,460	3,347	2,833	3,222	2,390	4,594	99	99	94	96	97	98	98
7/31	13 b	13	14	24	26	7	6	4 b	7,640	7,746	2,474	3,371	2,859	3,229	2,396	4,598	99	99	95	97	98	98	98
8/01	4 b	4	6	7	13 e	6	6	4 b	7,644	7,750	2,480	3,378	2,872	3,235	2,402	4,602	99	99	95	97	98	98	98
8/02	5 b	5	25	37	11 b	9	5	4 b	7,649	7,755	2,505	3,415	2,883	3,244	2,407	4,607	99	99	96	97	98	98	98
8/03	7 b	7	c	20	13	4	8	3 b	7,656	7,762		3,435	2,896	3,248	2,415	4,610	99	99	97	98	98	99	98
8/04	4 b	4	c	21	5	3	3	5 e	7,660	7,766		3,456	2,901	3,251	2,418	4,615	99	99	97	98	98	99	98
8/05	4 b	4	c	12	6 b	2	5	18	7,664	7,770		3,468	2,907	3,253	2,423	4,633	99	99	98	98	98	99	99
8/06	2 b	2	c	6	3	7	0	12	7,666	7,772		3,474	2,910	3,260	2,423	4,645	99	99	98	98	99	99	99
8/07	3 b	3	c	4	3	6	0	13	7,669	7,775		3,478	2,913	3,266	2,423	4,658	99	99	98	98	99	99	99
8/08	3 b	3	c	2	8	9	3	7	7,672	7,778		3,480	2,921	3,275	2,426	4,665	99	99	98	99	99	99	99

-Continued-

Table 1. (page 2 of 2)

Date	Daily Passage								Cumulative Passage								Percent Passage						
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1999	2000	2001	2002	2003
8/09	5 b	5	c	10	0	3	1	5	7,677	7,783		3,490	2,921	3,278	2,427	4,670	99	99	98	99	99	99	100
8/10	1 b	1	c	0	1	1	3	4	7,678	7,784		3,490	2,922	3,279	2,430	4,674	100	100	98	99	99	99	100
8/11	3 b	3	c	3	6	2	3	3	7,681	7,787		3,493	2,928	3,281	2,433	4,677	100	100	98	99	99	100	100
8/12	8 b	8	c	1	6	3	4	3	7,689	7,795		3,494	2,934	3,284	2,437	4,680	100	100	98	99	99	100	100
8/13	5 b	5	c	7	2	2	1	1	7,694	7,800		3,501	2,936	3,286	2,438	4,681	100	100	99	99	99	100	100
8/14	3 b	3	c	2	7	0	1	6	7,697	7,803		3,503	2,943	3,286	2,439	4,687	100	100	99	99	99	100	100
8/15	4 b	4	c	16	5	1	1	1 e	7,701	7,807		3,519	2,948	3,287	2,440	4,687	100	100	99	100	99	100	100
8/16	8 b	8	c	5	2	1	1	1 b	7,708	7,815		3,524	2,950	3,288	2,441	4,688	100	100	99	100	99	100	100
8/17	1 b	1	c	5	0	4	0	1 b	7,709	7,816		3,529	2,950	3,292	2,441	4,689	100	100	99	100	99	100	100
8/18	1 b	1	c	0	1	1	2	1 e	7,710	7,817		3,529	2,951	3,293	2,443	4,690	100	100	99	100	100	100	100
8/19	0 b	0	c	1	2	2 b	0	0	7,710	7,817		3,530	2,953	3,295	2,443	4,690	100	100	99	100	100	100	100
8/20	3 b	3	c	4	0	2 b	0	0	7,713	7,820		3,534	2,953	3,297	2,443	4,690	100	100	100	100	100	100	100
8/21	2 b	2	c	4	0	2 b	0	1	7,715	7,822		3,538	2,953	3,299	2,443	4,691	100	100	100	100	100	100	100
8/22	1 b	1	c	0	1	2 b	1	0	7,716	7,823		3,538	2,954	3,301	2,444	4,691	100	100	100	100	100	100	100
8/23	0 b	0	c	0	2	1 b	0	0	7,716	7,823		3,538	2,956	3,302	2,444	4,691	100	100	100	100	100	100	100
8/24	0 b	0	c	0	0	1 b	0	1	7,716	7,823		3,538	2,956	3,303	2,444	4,692	100	100	100	100	100	100	100
8/25	0 b	0	c	1	0	1 b	0	1	7,716	7,823		3,539	2,956	3,304	2,444	4,693	100	100	100	100	100	100	100
8/26	0 b	0	c	1	2	1 b	0	0	7,716	7,823		3,540	2,958	3,305	2,444	4,693	100	100	100	100	100	100	100
8/27	0 b	0	c	2	0	2	0	0	7,716	7,823		3,542	2,958	3,307	2,444	4,693	100	100	100	100	100	100	100
8/28	0 b	0	c	0	0	1	0	0	7,716	7,823		3,542	2,958	3,308	2,444	4,693	100	100	100	100	100	100	100
8/29	0 b	0	c	0	1	0	0	0	7,716	7,823		3,542	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
8/30	0 b	0	c	1	0	0	0	0	7,716	7,823		3,543	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
8/31	0 b	0	c	0	0	0	0	0	7,716	7,823		3,543	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
9/01	0 b	0	c	2	0	0	0	0	7,716	7,823		3,545	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
9/02	0 b	0	c	0	0	0	0	0	7,716	7,823		3,545	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
9/03	0 b	0	c	0	0	0	0	0	7,716	7,823		3,545	2,959	3,308	2,444	4,693	100	100	100	100	100	100	100
9/04	0 b	0	c	0	0	1	0	0	7,716	7,823		3,545	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/05	0 b	0	c	1	0	0	0	0	7,716	7,823		3,546	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/06	0 b	0	c	0	0	0	0	0	7,716	7,823		3,546	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/07	0 b	0	c	0	0	0	0	0	7,716	7,823		3,546	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/08	0 b	0	c	1	0	0	0	0	7,716	7,823		3,547	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/09	0 b	0	c	0	0	0	0	0	7,716	7,823		3,547	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/10	0 b	0	c	0	0	0	0	0	7,716	7,823		3,547	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/11	0 b	0	c	0	0	0	0	0	7,716	7,823		3,547	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/12	0 b	0	c	1	0	0	0	0	7,716	7,823		3,548	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/13	0 b	0	c	0	0	0	0	0	7,716	7,823		3,548	2,959	3,309	2,444	4,693	100	100	100	100	100	100	100
9/14	0 b	0	c	0	1	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/15	0 b	0	c	0	0	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/16	0 b	0 b	c	0	0	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/17	0 b	0 b	c	0	0 b	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/18	0 b	0 b	c	0	0 b	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/19	0 b	0 b	c	0	0 b	0	0	0	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
9/20	0 b	0 b	c	0	0 b	0	0	0 b	7,716	7,823		3,548	2,960	3,309	2,444	4,693	100	100	100	100	100	100	100
Total	7,716	7,823	2,505	3,548	2,960	3,309	2,444	4,693															
Obs.	6,751	7,821	2,505	2,439	2,930	3,266	2,443	975															
Est (%)	12.5	0.2	0.0	31.3	1.0	1.3	0.04	79.2															

a = Daily passage was estimated due to the occurance of a hole in the weir.
b = The weir was not operational; daily passage was estimated.
c = The weir was not operational; daily passage was not estimated
d = Partial day count, passage was not estimated.
e = Partial day count, passage was estimated.

Table 2. Historical passage of chum salmon at George River weir.

Date	Daily Passage								Cumulative Passage								Percent Passage						
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1999	2000	2001	2002	2003
6/15	1 b	0	c	0 b	0 b	0 b	0 b	4 b	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0
6/16	2 b	2 a	c	0 b	0 b	0 b	1 b	8 b	2	2	0	0	0	0	1	12	0	0	0	0	0	0	0
6/17	3 b	2	c	0 b	0 e	0 b	1 b	13 b	6	4	0	0	0	0	2	25	0	0	0	0	0	0	0
6/18	2 b	0	c	0 b	0	0 b	1 b	17 b	7	4	0	0	0	0	2	42	0	0	0	0	0	0	0
6/19	5 b	2	c	0 b	0	0 b	2 b	21 b	12	6	0	0	0	0	4	63	0	0	0	0	0	0	0
6/20	2 b	0	c	0 b	0	0 b	1 b	26 b	14	6	0	0	0	0	5	89	0	0	0	0	0	0	0
6/21	65	2	c	0 b	5	17 b	11 e	48 b	79	8	0	0	5	17	16	137	0	0	0	0	0	0	0
6/22	613	3	1 d	0 b	6	20 b	107	13 b	692	11	1	0	11	36	123	150	4	0	0	0	0	2	0
6/23	1,314	35	0	0 b	38	126 b	58	11 b	2,006	46	1	0	49	162	181	161	10	1	0	1	1	3	0
6/24	692	52	6	21 b	17	56 b	23	11 b	2,698	98	7	21	66	219	204	173	14	2	0	2	2	3	1
6/25	49	43	23	8 b	17	56 e	124	11 b	2,747	141	30	29	83	275	328	184	14	2	0	2	2	5	1
6/26	376	49	162	21 b	1	10	245	11 b	3,123	190	192	50	84	285	573	195	16	3	0	2	2	9	1
6/27	508	79	116	29 b	90	17	118	61 b	3,631	269	308	79	174	302	691	256	19	5	1	5	3	11	1
6/28	167	34	289	78 b	0	39	237	97 b	3,798	303	597	157	174	341	928	353	20	5	1	5	3	14	1
6/29	191 a	178	288	78 b	4	140	149	82 b	3,989	481	885	235	178	481	1,077	435	21	8	2	5	4	16	1
6/30	215	204	399	67 b	12	7	203	25 b	4,204	685	1,284	302	190	488	1,280	460	22	12	3	5	4	20	1
7/01	498	64	634	106 b	108	40	175	181 e	4,702	749	1,918	408	298	528	1,455	641	24	13	4	9	5	22	2
7/02	730 a	77	388	100 b	273	110	34	332 e	5,432	826	2,306	507	571	638	1,489	973	28	14	4	18	5	23	3
7/03	961	267	557	117 b	128	21	151	244 b	6,393	1,093	2,863	625	699	659	1,640	1,217	33	18	5	20	6	25	4
7/04	1,074	83	605	128 b	77	26	37	179 b	7,467	1,176	3,468	752	776	685	1,677	1,396	39	20	7	22	6	26	4
7/05	326	174	960	109 b	72	68	192	134 b	7,793	1,350	4,428	862	848	753	1,869	1,531	40	23	7	24	6	29	5
7/06	606	111	439	164 b	218	228	518	166 b	8,399	1,461	4,867	1,025	1,066	981	2,387	1,697	43	25	9	31	8	36	5
7/07	575	52	123 d	199 b	162	425	339	136 b	8,974	1,513	4,990	1,224	1,228	1,406	2,726	1,833	46	26	11	35	12	42	5
7/08	629	49	c	183 b	47	173	186	824	9,603	1,562		1,407	1,275	1,579	2,912	2,657	50	26	12	37	14	45	8
7/09	852	40	c	376 b	40	319	198	1,362	10,455	1,602		1,784	1,315	1,898	3,110	4,019	54	27	15	38	16	48	12
7/10	241	62	c	454 b	58	349	317	660	10,696	1,664		2,238	1,373	2,247	3,427	4,679	55	28	19	39	19	52	14
7/11	446	45	c	469 b	436	546	399	224	11,142	1,709		2,706	1,809	2,793	3,826	4,903	57	29	23	52	24	58	15
7/12	343	207	c	483 b	161	600	279	801	11,485	1,916		3,189	1,970	3,393	4,105	5,704	59	32	28	56	29	63	17
7/13	394	7	c	325 b	91	429	149	1,856	11,879	1,923		3,514	2,061	3,822	4,254	7,560	61	33	30	59	33	65	22
7/14	489	12	c	182	41	610	203	2,020	12,368	1,935		3,696	2,102	4,432	4,457	9,580	64	33	32	60	38	68	28
7/15	556	158	c	194	22	537	276	1,539	12,924	2,093		3,890	2,124	4,969	4,733	11,119	67	35	34	61	43	72	33
7/16	232	51	c	333	150	325	205	468	13,156	2,144		4,223	2,274	5,294	4,938	11,587	68	36	37	65	46	75	34
7/17	462	236	c	327	88	427	154	675	13,618	2,380		4,550	2,362	5,721	5,092	12,262	70	40	39	68	49	78	36
7/18	514	207	c	394	55	502	189	846	14,132	2,587		4,944	2,417	6,223	5,281	13,108	73	44	43	69	54	81	39
7/19	667	575	c	768	144	533	131	1,580	14,799	3,162		5,712	2,561	6,756	5,412	14,688	76	54	49	73	58	83	44
7/20	322	300	c	709	18	427	63	1,805	15,121	3,462		6,421	2,579	7,183	5,475	16,293	78	59	56	74	62	84	48
7/21	387	342	c	318	41	330	115	1,230	15,508	3,804		6,737	2,620	7,513	5,590	17,523	80	64	58	75	65	85	52
7/22	273	144	c	379	87	397	65	1,122	15,781	3,948		7,116	2,707	7,910	5,655	18,645	82	67	62	78	68	86	55
7/23	321	292	c	465	172	208	73	1,020	16,102	4,240		7,581	2,879	8,118	5,728	19,665	83	72	66	82	70	88	58
7/24	525	207	c	533	116	264	70	588	16,627	4,447		8,114	2,995	8,382	5,798	20,253	86	75	70	86	72	89	60
7/25	449	238	c	443	76	244	60	749	17,076	4,685		8,557	3,071	8,626	5,858	21,002	88	79	74	88	74	90	62
7/26	508	110	c	353	56	337	74	750	17,584	4,795		8,910	3,127	8,963	5,932	21,752	91	81	77	90	77	91	65
7/27	195 b	42	c	195	47	341	66	761	17,779	4,837		9,105	3,174	9,304	5,998	22,513	92	82	79	91	80	92	67
7/28	130 b	176	c	292	34	314	44	1,307 b	17,910	5,013		9,397	3,208	9,618	6,042	23,820	92	85	81	92	83	92	71
7/29	204 b	96	c	148	28	233	69	1,589 b	18,114	5,109		9,545	3,236	9,851	6,111	25,409	93	86	83	93	85	93	75
7/30	130 b	71	546	65	26	189	44	656 b	18,244	5,180	5,536	9,610	3,262	10,040	6,155	26,066	94	88	83	93	87	94	77
7/31	95 b	133	367	286	63	172	32	603 b	18,339	5,313	5,903	9,896	3,325	10,212	6,187	26,669	95	90	86	95	88	95	79
8/01	107 b	41	295	221	33 e	145	36	654 b	18,446	5,354	6,198	10,117	3,358	10,357	6,223	27,322	95	91	88	96	89	95	81
8/02	74 b	28	193	214	23 b	180	25	1,126 b	18,520	5,382	6,391	10,331	3,381	10,537	6,248	28,448	95	91	89	97	91	95	85
8/03	101 b	35	c	216	22	131	34	694 b	18,620	5,417		10,547	3,403	10,668	6,282	29,142	96	92	91	97	92	96	87
8/04	80 b	70	c	166	3	85	27	331 e	18,700	5,487		10,713	3,406	10,753	6,309	29,473	96	93	93	98	93	96	88
8/05	59 b	50	c	137	7 b	85	20	602	18,760	5,537		10,850	3,413	10,838	6,329	30,075	97	94	94	98	93	97	89
8/06	77 b	38	c	61	1	103	26	591	18,837	5,575		10,911	3,414	10,941	6,355	30,666	97	94	94	98	94	97	91
8/07	27 b	32	c	63	3	84	9	587	18,863	5,607		10,974	3,417	11,025	6,364	31,253	97	95	95	98	95	97	93
8/08	27 b	33	c	82	2	109	9	366	18,890	5,640		11,056	3,419	11,134	6,373	31,619	97	95	96	98	96	97	94
8/09	44 b	13	c	73	6	75	15	385	18,934	5,653		11,129	3,425	11,209	6,388	32,004	98	96	96	98	97	98	95
8/10	71 b	17	c	24	3	63	24	338	19,005	5,670		11,153	3,428	11,272	6,412	32,342	98	96	97	98	97	98	96

-Continued-

Table 2. (page 2 of 2)

Date	Daily Passage								Cumulative Passage								Percent Passage						
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1999	2000	2001	2002	2003
8/11	41 b	25	c	22	6	35	14	284	19,047	5,695		11,175	3,434	11,307	6,426	32,626	98	96	97	98	97	98	97
8/12	53 b	34	c	28	2	41	18	144	19,100	5,729		11,203	3,436	11,348	6,444	32,770	98	97	97	98	98	98	97
8/13	24 b	39	c	56	17	22	8	227	19,124	5,768		11,259	3,453	11,370	6,452	32,997	99	98	97	99	98	99	98
8/14	24 b	32	c	34	5	11	8	188	19,148	5,800		11,293	3,458	11,381	6,460	33,185	99	98	98	99	98	99	99
8/15	36 b	9	c	58	2	13	12	71 e	19,183	5,809		11,351	3,460	11,394	6,472	33,257	99	98	98	99	98	99	99
8/16	24 b	12	c	24	2	19	8	61 b	19,207	5,821		11,375	3,462	11,413	6,480	33,318	99	99	98	99	98	99	99
8/17	9 b	8	c	11	2	14	3	77 b	19,216	5,829		11,386	3,464	11,427	6,483	33,395	99	99	99	99	99	99	99
8/18	33 b	5	c	23	1	38	11	58 e	19,248	5,834		11,409	3,465	11,465	6,494	33,453	99	99	99	99	99	99	99
8/19	15 b	6	c	25	3	23 b	5	43	19,263	5,840		11,434	3,468	11,488	6,499	33,496	99	99	99	99	99	99	99
8/20	15 b	7	c	20	7	20 b	5	34	19,278	5,847		11,454	3,475	11,508	6,504	33,530	99	99	99	100	99	99	100
8/21	3 b	6	c	6	4	18 b	1	30	19,281	5,853		11,460	3,479	11,526	6,505	33,560	99	99	99	100	99	99	100
8/22	24 b	0	c	7	0	15 b	8	35	19,305	5,853		11,467	3,479	11,541	6,513	33,595	100	99	99	100	99	100	100
8/23	27 b	0	c	6	1	12 b	9	15	19,331	5,853		11,473	3,480	11,553	6,522	33,610	100	99	99	100	100	100	100
8/24	3 b	0	c	1	0	10 b	1	13	19,334	5,853		11,474	3,480	11,563	6,523	33,623	100	99	99	100	100	100	100
8/25	9 b	2	c	5	3	7 b	3	3	19,343	5,855		11,479	3,483	11,570	6,526	33,626	100	99	99	100	100	100	100
8/26	0 b	5	c	3	1	5 b	0	7	19,343	5,860		11,482	3,484	11,575	6,526	33,633	100	99	99	100	100	100	100
8/27	6 b	5	c	1	1	3	2	3	18,349	5,865		11,483	3,485	11,578	6,528	33,636	100	99	99	100	100	100	100
8/28	0 b	1	c	4	1	2	0	4	19,349	5,866		11,487	3,486	11,580	6,528	33,640	100	99	99	100	100	100	100
8/29	3 b	4	c	1	1	1	1	3	19,352	5,870		11,488	3,487	11,581	6,529	33,643	100	99	99	100	100	100	100
8/30	0 b	6	c	3	1	0	0	1	19,352	5,876		11,491	3,488	11,581	6,529	33,644	100	99	99	100	100	100	100
8/31	18 b	9	c	7	0	2	6	5	19,370	5,885		11,498	3,488	11,583	6,535	33,649	100	100	100	100	100	100	100
9/01	0 b	1	c	5	2	0	0	5	19,370	5,886		11,503	3,490	11,583	6,535	33,654	100	100	100	100	100	100	100
9/02	6 b	0	c	4	0	1	2	4	19,376	5,886		11,507	3,490	11,584	6,537	33,658	100	100	100	100	100	100	100
9/03	0 b	4	c	2	1	1	0	1	19,376	5,890		11,509	3,491	11,585	6,537	33,659	100	100	100	100	100	100	100
9/04	6 b	0	c	9	0	1	2	3	19,382	5,890		11,518	3,491	11,586	6,539	33,662	100	100	100	100	100	100	100
9/05	0 b	4	c	7	1	0	0	2	19,382	5,894		11,525	3,492	11,586	6,539	33,664	100	100	100	100	100	100	100
9/06	3 b	1	c	8	0	1	1	0	19,385	5,895		11,533	3,492	11,587	6,540	33,664	100	100	100	100	100	100	100
9/07	0 b	7	c	4	0	1	0	0	19,385	5,902		11,537	3,492	11,588	6,540	33,664	100	100	100	100	100	100	100
9/08	0 b	0	c	3	0	3	0	0	19,385	5,902		11,540	3,492	11,591	6,540	33,664	99.954	100	100	100	100	100	100
9/09	0 b	0	c	4	0	3	0	1	19,385	5,902		11,544	3,492	11,594	6,540	33,665	99.954	100	100	100	100	100	100
9/10	3 b	5	c	0	0	0	1	0	19,387	5,907		11,544	3,492	11,594	6,541	33,665	99.969	100	100	100	100	100	100
9/11	0 b	0	c	4	0	2	0	0	19,387	5,907		11,548	3,492	11,596	6,541	33,665	99.969	100	100	100	100	100	100
9/12	6 b	0	c	0	0	1	2	0	19,393	5,907		11,548	3,492	11,597	6,543	33,665	100	100	100	100	100	100	100
9/13	0 b	0	c	1	0	1	0	1	19,393	5,907		11,549	3,492	11,598	6,543	33,666	100	100	100	100	100	100	100
9/14	0 b	0	c	0	0	1	0	0	19,393	5,907		11,549	3,492	11,599	6,543	33,666	100	100	100	100	100	100	100
9/15	0 b	0	c	1	0	0	0	0	19,393	5,907		11,550	3,492	11,599	6,543	33,666	100	100	100	100	100	100	100
9/16	0 b	0 b	c	1	0	0	0	0	19,393	5,907		11,551	3,492	11,599	6,543	33,666	100	100	100	100	100	100	100
9/17	0 b	0 b	c	0	0 b	0	0	0	19,393	5,907		11,551	3,492	11,599	6,543	33,666	100	100	100	100	100	100	100
9/18	0 b	0 b	c	0	0 b	0	0	0	19,393	5,907		11,551	3,492	11,599	6,543	33,666	100	100	100	100	100	100	100
9/19	0 b	0 b	c	0	0 b	2	0	0	19,393	5,907		11,551	3,492	11,601	6,543	33,666	100	100	100	100	100	100	100
9/20	0 b	0 b	c	1	0 b	0	0	0 b	19,393	5,907		11,552	3,492	11,601	6,543	33,666	100	100	100	100	100	100	100
Total	19,393	5,907	6,391	11,552	3,492	11,601	6,543	33,666															
Obs.	16,681	5,906	6,391	8,044	3,430	11,219	6,529	25,005															
Est (%)	14.0	0.0	0.0	30.4	1.8	3.3	0.3	25.7															

a = Daily passage was estimated due to the occurance of a hole in the weir.
b = The weir was not operational; daily passage was estimated.
c = The weir was not operational; daily passage was not estimated
d = Partial day count, passage was not estimated.
e = Partial day count, passage was estimated.

Table 3. Historical passage of coho salmon at George River weir.

Date	Daily Passage								Cumulative Passage													
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1997	1999	2000	2001	2002	2003
6/15	0 b	0	c	0 b	0 b	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/16	0 b	0 a	c	0 b	0 b	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/17	0 b	0	c	0 b	0 e	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/18	0 b	0	c	0 b	0	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/19	0 b	0	c	0 b	0	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/20	0 b	0	c	0 b	0	0 b	0 b	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/21	0	0	c	0 b	0	0 b	0 e	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/22	0	0	0 d	0 b	0	0 b	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/23	0	0	0	0 b	0	0 b	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/24	0	0	0	0 b	0	0 b	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/25	0	0	0	0 b	0	0 e	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/26	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/27	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/28	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/29	0 a	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/30	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/01	0	0	0	0 b	0	0	0	0 e	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/02	0 a	0	0	0 b	0	0	0	0 e	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/03	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/04	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/05	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/06	0	0	0	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/07	0	0	0 d	0 b	0	0	0	0 b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/08	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/09	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/10	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/11	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/12	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/13	0	0	c	0 b	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/14	0	0	c	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/15	0	0	c	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
7/16	1	0	c	0	0	0	0	0	1	0		0	0	0	0	0	0	0	0	0	0	0
7/17	0	0	c	0	0	0	0	0	1	0		0	0	0	0	0	0	0	0	0	0	0
7/18	0	0	c	0	0	0	0	1	1	0		0	0	0	0	1	0	0	0	0	0	0
7/19	1	0	c	0	0	0	0	1	2	0		0	0	0	0	2	0	0	0	0	0	0
7/20	3	2	c	0	0	0	0	2	5	2		0	0	0	0	4	0	0	0	0	0	0
7/21	0	1	c	0	0	0	0	8	5	3		0	0	0	0	12	0	0	0	0	0	0
7/22	0	2	c	0	1	0	0	1	5	5		0	1	0	0	13	0	0	0	0	0	0
7/23	6	0	c	0	2	0	0	10	11	5		0	3	0	0	23	0	0	0	0	0	0
7/24	22	2	c	0	0	0	0	5	33	7		0	3	0	0	28	0	0	0	0	0	0
7/25	47	2	c	0	0	0	0	11	80	9		0	3	0	0	39	0	0	0	0	0	0
7/26	93	1	c	0	5	0	0	19	173	10		0	8	0	0	58	0	0	0	0	0	0
7/27	c	2	c	0	4	1	0	22		12		0	12	1	0	80	0	0	0	0	0	0
7/28	c	3	c	1	0	0	1	12 b		15		1	12	1	1	92	0	0	0	0	0	0
7/29	c	2	c	0	0	0	3	12 b		17		1	12	1	4	104	0	0	0	0	0	0
7/30	c	3	7	0	0	3	1	12 b		20	7	1	12	4	5	116	0	0	0	0	0	0
7/31	c	9	8	0	9	6	1	11 b		29	15	1	21	10	6	127	0	0	0	0	0	0
8/01	c	9	14	0	5 e	7	2	21 b		38	29	1	26	17	8	148	0	0	0	0	0	0
8/02	c	22	23	1	7 b	11	9	30 b		60	52	2	33	28	17	178	1	0	0	0	0	1
8/03	c	25	c	0	11	9	13	23 b		85		2	44	37	30	201	1	0	0	0	0	1
8/04	c	52	c	1	6	3	22	23 e		137		3	50	40	52	223	1	0	0	0	1	1
8/05	c	41	c	12	16 b	12	16	62		178		15	66	52	68	285	2	0	1	0	1	1
8/06	c	59	c	0	23	25	18	98		237		15	89	77	86	383	3	0	1	1	1	1
8/07	c	75	c	3	25	22	6	156		312		18	114	99	92	539	3	0	1	1	1	2
8/08	c	69	c	4	119	62	14	113		381		22	233	161	106	652	4	0	2	1	2	2

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Table 3. (page 2 of 2)

Date	Daily Passage								Cumulative Passage													
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1997	1999	2000	2001	2002	2003
8/09	c	70	c	6	5	32	12	507		451		28	238	183	118	1,159	5	0	2	1	2	3
8/10	c	35	c	8	53	13	43	340		486		36	291	206	161	1,499	5	0	3	1	2	5
8/11	c	71	c	13	116	2	15	186		557		49	407	208	176	1,685	6	1	4	1	3	5
8/12	c	198	c	4	245	252	54	304		755		53	652	460	230	1,989	8	1	6	3	3	6
8/13	c	170	c	23	909	273	13	146		925		76	1,561	733	243	2,135	10	1	14	5	4	6
8/14	c	213	c	32	480	123	14	1,620		1,138		108	2,041	856	257	3,755	12	1	18	6	4	11
8/15	c	92	c	33	263	187	231	534 e		1,230		141	2,304	1,043	488	4,290	13	2	20	7	7	13
8/16	c	44	c	70	207	1,534	115	376 b		1,274		211	2,511	2,577	603	4,666	14	2	22	18	9	14
8/17	c	59	c	94	186	1,301	22	282 b		1,333		305	2,697	3,878	625	4,947	14	3	24	27	9	15
8/18	c	103	c	116	558	709	33	105 e		1,436		421	3,255	4,587	658	5,053	16	5	29	32	10	15
8/19	c	70	c	68	216	937 b	11	216		1,506		489	3,471	5,524	669	5,269	16	5	31	38	10	16
8/20	c	346	c	186	1,177	870 b	10	353		1,852		675	4,648	6,394	679	5,622	20	8	41	44	10	17
8/21	c	334	c	193	1,451	803 b	19	2,064		2,186		868	6,099	7,197	698	7,686	24	10	54	50	10	23
8/22	c	1,152	c	85	435	735 b	525	855		3,338		953	6,534	7,932	1,223	8,541	36	11	58	55	18	26
8/23	c	131	c	186	49	668 b	146	671		3,469		1,139	6,583	8,600	1,369	9,212	38	13	58	60	20	28
8/24	c	162	c	139	220	601 b	48	474		3,631		1,278	6,803	9,201	1,417	9,686	39	14	60	64	21	29
8/25	c	66	c	96	273	533 b	38	2,672		3,697		1,374	7,076	9,734	1,455	12,358	40	15	63	68	22	37
8/26	c	275	c	141	310	466 b	12	2,232		3,972		1,515	7,386	10,200	1,467	14,590	43	17	66	71	22	44
8/27	c	64	c	206	1,228	430	133	2,005		4,036		1,721	8,614	10,630	1,600	16,595	44	19	76	74	24	50
8/28	c	60	c	230	1,101	368	23	969		4,096		1,951	9,715	10,998	1,623	17,564	44	22	86	76	24	53
8/29	c	17	c	198	637	480	2	444		4,113		2,149	10,352	11,478	1,625	18,008	45	24	92	80	24	54
8/30	c	1,471	c	70	244	262	53	396		5,584		2,219	10,596	11,740	1,678	18,404	61	25	94	82	25	55
8/31	c	358	c	107	97	402	641	2,934		5,942		2,326	10,693	12,142	2,319	21,338	65	26	95	84	34	64
9/01	c	482	c	1,296	55	450	106	5,659		6,424		3,622	10,748	12,592	2,425	26,997	70	41	95	87	36	81
9/02	c	202	c	718	131	190	48	1,506		6,626		4,340	10,879	12,782	2,473	28,503	72	48	97	89	37	86
9/03	c	161	c	72	145	233	65	241		6,787		4,412	11,024	13,015	2,538	28,744	74	49	98	90	38	86
9/04	c	151	c	185	73	98	102	190		6,938		4,597	11,097	13,113	2,640	28,934	75	52	99	91	39	87
9/05	c	261	c	113	91	41	372	407		7,199		4,710	11,188	13,154	3,012	29,341	78	53	99	91	45	88
9/06	c	58	c	108	14	63	1,906	634		7,257		4,818	11,202	13,217	4,918	29,975	79	54	99	92	73	90
9/07	c	234	c	114	0	64	679	801		7,491		4,932	11,202	13,281	5,597	30,776	81	55	99	92	83	92
9/08	c	34	c	425	10	192	372	392		7,525		5,357	11,212	13,473	5,969	31,168	82	60	100	94	88	94
9/09	c	375	c	331	11	101	57	212		7,900		5,688	11,223	13,574	6,026	31,380	86	64	100	94	89	94
9/10	c	428	c	86	3	166	40	148		8,328		5,774	11,226	13,740	6,066	31,528	90	65	100	95	90	95
9/11	c	174	c	35	14	37	86	231		8,502		5,809	11,240	13,777	6,152	31,759	92	65	100	96	91	95
9/12	c	47	c	566	3	13	373	59		8,549		6,375	11,243	13,790	6,525	31,818	93	72	100	96	97	96
9/13	c	141	c	676	2	45	107	1,259		8,690		7,051	11,245	13,835	6,632	33,077	94	79	100	96	98	99
9/14	c	105	c	917	3	82	47	150		8,795		7,968	11,248	13,917	6,679	33,227	95	89	100	97	99	100
9/15	c	174	c	653	5	35	24	14		8,969		8,621	11,253	13,952	6,703	33,241	97	97	100	97	99	100
9/16	c	70 b	c	60	3	88	22	1		9,039		8,681	11,256	14,040	6,725	33,242	98	97	100	98	99	100
9/17	c	70 b	c	36	3 b	143	13	28		9,108		8,717	11,259	14,183	6,738	33,270	99	98	100	99	100	100
9/18	c	50 b	c	145	2 b	127	9	7		9,158		8,862	11,261	14,310	6,747	33,277	99	99	100	99	100	100
9/19	c	30 b	c	49	1 b	13	4	0		9,188		8,911	11,262	14,323	6,751	33,277	100	100	100	99	100	100
9/20	c	22 b	c	3	0 b	75	8	4 b		9,210		8,914	11,262	14,398	6,759	33,280	100	100	100	100	100	100
Total	173	9,210	52	8,914	11,262	14,398	6,759	33,280														
Obs.	173	8,969	52	8,930	11,228	8,802	6,759	31,925														
Est (%)	0.0	2.6	0.0	0.0	0.3	38.9	0.0	4.1														

a = Daily passage was estimated due to the occurance of a hole in the weir.

b = The weir was not operational; daily passage was estimated.

c = The weir was not operational; daily passage was not estimated

d = Partial day count, passage was not estimated.

e = Partial day count, passage was estimated.

Table 4. Historical daily passage of sockeye and pink salmon at George River weir.

	Sockeye Salmon								Pink Salmon							
Date	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003
6/15		0								0						
6/16		0								0						
6/17		0			0					0			0			
6/18		0			0					0			0			
6/19		0			0					0			0			
6/20		0			0					0			0			
6/21	0	0			0		0		0	0			0		0	
6/22	0	0	0		0		0		0	0	0		0		0	
6/23	0	38	0		0		0		0	0	0		0		0	
6/24	0	53	0		0		0		0	0	0		0		0	
6/25	0	0	0		0	0	0		0	0	0		0	0	1	
6/26	5	0	0		0	0	0		0	0	0		0	0	0	
6/27	2	21	0		2	0	1		0	0	0		0	0	0	
6/28	1	18	0		0	0	0		0	0	0		0	0	0	
6/29	3	39	0		0	0	0		0	0	0		0	0	0	
6/30	4	86	0		0	0	0		0	0	0		0	0	2	
7/01	1	35	0		0	0	0	0	0	0	0		2	0	1	0
7/02	10	15	0		0	0	0	0	1	0	0		0	0	0	0
7/03	18	10	1		0	0	1		1	0	0		3	0	0	
7/04	8	11	2		0	0	0		0	0	0		0	0	2	
7/05	6	8	2		0	0	0		2	0	0		0	0	5	
7/06	9	9	0		0	0	0		1	0	0		0	0	4	
7/07	3	0	0		0	0	0		0	0	0		2	0	31	
7/08	0	3			0	0	0	0	0	0			2	0	35	18
7/09	15	1			0	0	0	0	12	0			2	0	38	19
7/10	0	5			0	0	0	0	0	0			0	0	58	10
7/11	0	1			0	0	0	0	0	0			0	0	160	1
7/12	4	25			0	0	0	0	4	1			5	0	40	9
7/13	2	0			0	1	0	0	9	0			1	0	40	1
7/14	0	1		0	0	0	1	0	11	0		0	1	2	57	10
7/15	0	0		0	0	0	0	0	34	1		0	0	1	37	6
7/16	1	0		0	0	0	1	0	18	0		0	5	4	19	0
7/17	0	6		0	0	0	1	0	34	0		0	3	0	30	3
7/18	0	3		0	0	0	0	0	44	2		0	2	2	14	5
7/19	3	2		0	0	0	0	0	90	1		0	1	4	16	6
7/20	0	4		0	0	0	0	0	68	0		0	1	3	3	8
7/21	0	2		0	0	0	0	1	61	0		0	2	9	8	11
7/22	0	1		0	0	0	0	2	45	1		0	4	10	4	0
7/23	2	0		1	1	0	0	0	39	2		3	11	8	2	3
7/24	0	2		1	2	0	2	0	68	0		3	5	1	0	1
7/25	2	1		0	0	0	0	1	74	1		0	0	2	2	0
7/26	0	0		0	0	0	0	1	28	0		1	4	0	2	2
7/27		0		0	1	0	0	0		0		2	5	1	0	1
7/28		1		0	0	1	0			1		0	0	3	2	
7/29		7		0	0	0	0			0		1	0	6	6	
7/30		0	0	0	1	0	0			0	0	1	0	0	2	
7/31		1	3	0	0	1	1			1	3	7	0	1	0	
8/01		0	0	0		1	0			1	0	2		1	1	
8/02		0	1	1		0	0			0	1	0		1	0	
8/03		0		0	0	1	0			0		1	0	5	0	
8/04		1		1	0	0	0	0		0		5	0	2	1	2
8/05		2		0	0	1	1	0		0		4	0	7	0	2
8/06		3		1	0	2	1	0		0		1	0	1	0	3
8/07		1		0	0	0	0	1		0		3	0	6	0	3
8/08		1		0	0	3	0	2		1		4	0	0	0	0
8/09		4		4	0	2	0	1		1		2	0	2	0	2
8/10		0		1	1	1	0	1		1		1	0	0	0	1
8/11		0		0	0	1	2	3		0		7	0	0	0	0
8/12		3		2	2	4	0	1		0		1	0	0	1	0
8/13		6		2	0	1	1	0		0		9	0	0	0	0

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Table 4. (page 2 of 2)

Date	Sockeye Salmon 1996	1997	1998	1999	2000	2001	2002	2003	Pink Salmon 1996	1997	1998	1999	2000	2001	2002	2003
8/14		4		0	0	0	0	0		0		9	0	1	0	0
8/15		0		1	0	0	1			0		3	0	0	0	
8/16		0		1	0	2	0			0		3	0	0	0	
8/17		0		0	1	0	0			0		4	0	0	0	
8/18		0		4	0	0	0	0		0		6	0	0	0	1
8/19		1		2	0		0	0		0		2	0		0	2
8/20		1		1	2		0	0		0		0	0		0	1
8/21		0		0	2		2	0		0		0	0		0	1
8/22		0		3	0		0	0		0		6	0		3	4
8/23		0		2	0		0	0		0		2	0		0	2
8/24		1		2	0		0	0		0		1	0		0	2
8/25		1		2	1		0	0		0		0	0		0	0
8/26		2		0	1		0	0		0		0	0		0	0
8/27		0		0	0	0	0	0		0		0	0	0	0	0
8/28		0		1	4	0	0	0		0		0	0	0	0	0
8/29		2		0	1	0	0	0		0		0	0	0	1	0
8/30		3		0	0	1	0	0		2		1	0	0	0	0
8/31		0		2	0	0	0	0		0		0	0	0	0	1
9/01		0		2	0	0	0	0		0		1	0	0	0	0
9/02		0		0	0	0	0	0		0		0	0	0	0	0
9/03		0		0	0	0	0	0		0		0	0	0	1	0
9/04		0		0	0	0	0	0		0		0	0	0	0	0
9/05		0		0	0	0	0	0		0		0	0	0	1	1
9/06		0		2	0	0	0	0		0		0	0	0	0	0
9/07		0		0	0	0	1	0		0		0	0	0	0	0
9/08		0		0	0	0	0	0		0		0	0	0	0	0
9/09		0		0	0	0	0	0		0		1	0	0	0	0
9/10		0		0	0	0	0	0		0		0	0	0	0	0
9/11		0		0	0	0	0	0		0		0	0	0	0	0
9/12		0		0	0	0	0	0		0		0	0	0	0	0
9/13		0		0	0	0	0	0		0		0	0	0	0	0
9/14		0		0	0	0	0	0		0		0	0	0	0	0
9/15		0		0	0	1	0	0		0		0	0	0	0	0
9/16				0	0	0	0	0				0	0	0	0	0
9/17				0		0	0	0				0		0	0	0
9/18				0		0	0	0				0		0	0	0
9/19				0		0	0	0				0		0	0	0
9/20				0		0	0					0		0	0	
Total	98	445	9	39	22	24	17	14	644	17	4	97	61	83	630	152

(shaded) = Weir was not operational

Table 5. Historical daily passage of other fish species at George River weir.

	Whitefish								Grayling								Northern Pike								Char							
Date	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003
6/15		0								0								0								0						
6/16		0								0								0								0						
6/17		0			0					0			0					0			0					0			0			
6/18		0			0					0			0					0			0					0			0			
6/19		0			0					0			0					0			0					0			0			
6/20		0			0					0			0					0			0					0			0			
6/21	0	0			1		4		0	0			0		0		0	0			0		0		0	0			0		0	
6/22	0	0	0		0		33		0	0	0		0		0		0	0	0		0		2		0	0	0		0		0	
6/23	0	0	0		0		37		0	0	1		0		3		0	0	0		0		3		0	0	0		0		0	
6/24	0	0	0		0		5		0	0	4		0		0		0	0	0		0		0		0	0	0		0		0	
6/25	0	0	0		1	1	1		0	0	0		1	6	0		0	0	0		0	0	1		0	0	0		0	0	0	
6/26	0	0	0		0	2	6		0	0	0		5	13	0		0	0	1		0	0	2		0	0	0		0	0	0	
6/27	0	0	0		1	3	5		0	0	0		13	5	0		0	0	0		0	1	1		0	0	0		0	0	0	
6/28	0	0	0		0	2	1		0	0	0		0	7	2		0	0	0		0	0	1		0	0	0		0	0	0	
6/29	0	0	0		0	0	0		0	0	0		0	1	0		0	0	0		0	0	0		0	0	0		0	0	0	
6/30	0	0	0		0	0	2		0	0	1		0	3	1		0	0	0		0	0	0		0	0	0		0	0	0	
7/01	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/02	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/03	0	0	0		0	0	4		0	0	0		19	0	0		0	0	0		0	0	1		0	0	0		0	0	0	
7/04	0	0	0		0	0	1		0	0	0		2	1	0		0	0	0		0	0	1		0	0	0		0	0	0	
7/05	0	0	0		0	0	1		0	0	0		10	0	0		0	0	0		0	0	0		0	0	0		0	0	0	
7/06	0	0	0		0	0	2		0	0	0		5	0	0		0	0	0		0	0	0		0	0	0		0	0	0	
7/07	0	0	0		0	5	6		0	0	0		2	0	1		0	0	0		0	0	2		0	0	0		0	0	0	
7/08	0	0			0	2	2	0	0	0			0	0	0	0	0	0			0	0	0	0	0	0			0	0	0	0
7/09	0	0			0	4	0	1	0	0			2	0	0	0	0	0			0	0	0	0	0	0			0	0	0	0
7/10	0	0			0	10	4	0	0	0			1	8	1	0	0	0			0	0	0	0	0	0			0	0	0	0
7/11	0	0			0	10	4	0	0	0			4	5	0	1	0	0			0	0	0	0	0	0			0	0	0	0
7/12	0	0			0	5	3	0	0	0			3	8	0	0	0	0			0	0	0	0	0	0			0	0	0	0
7/13	0	0			0	0	1	0	0	0			1	1	6	1	0	0			0	0	0	0	0	0			0	0	0	0
7/14	0	0		0	0	13	1	5	0	0		0	0	3	0	2	0	0		0	0	0	1	0	0	0		0	0	0	0	0
7/15	0	0		0	0	8	7	2	0	0		0	0	3	3	2	0	0		0	0	0	1	0	0	0		0	0	0	0	0
7/16	0	0		0	0	7	6	0	0	0		0	0	0	5	1	0	0		0	0	0	0	0	0	0		0	0	0	0	0
7/17	0	0		0	0	1	2	0	0	0		0	0	4	0	1	0	0		0	0	0	0	0	0	0		0	0	0	0	0
7/18	0	0		0	0	0	3	0	0	0		0	1	1	0	0	0	0		0	0	0	1	0	0	0		0	0	0	2	0
7/19	0	0		0	0	0	0	15	0	0		0	0	0	5	0	0	0		0	0	0	0	0	0	0		0	0	0	1	0
7/20	0	0		0	0	3	0	0	0	0		0	0	4	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0
7/21	0	0		0	0	2	2	45	0	0		0	0	3	1	3	0	0		0	0	0	0	0	0	0		0	0	0	3	0
7/22	0	0		0	0	0	2	0	0	0		0	1	0	5	0	0	0		0	0	0	0	0	0	0		0	0	0	2	0
7/23	0	0		0	0	0	3	0	0	0		0	0	0	1	1	0	0		0	0	0	0	0	0	0		0	0	0	2	0
7/24	0	0		0	0	0	0	0	0	0		0	0	0	2	1	0	0		0	0	0	0	0	0	0		0	0	0	2	0
7/25	0	0		0	0	0	0	1	0	0		0	0	0	2	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0
7/26	0	0		0	0	0	0	0	0	0		0	0	0	2	0	0	0		0	0	0	0	0	0	0		0	0	0	1	0
7/27		0		0	0	1	3	2		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	1	0
7/28		0		0	0	0	2			0		0	0	0	0			0		0	0	0	0			0		0	0	0	0	
7/29		0		0	0	0	3			0		0	0	0	3			0		0	0	0	0			0		0	0	0	0	
7/30		0	0	0	0	0	2			0	0	0	0	0	2			0	0	0	0	0	0			0	0	0	0	0	1	
7/31		0	0	0	0	0	2			0	0	0	0	0	0			0	0	0	0	0	0			0	0	0	0	0	0	
8/01		0	0	0		0	1			0	0	0		0	2			0	0	0		0	0			0	0	0		0	0	
8/02		0	0	0		0	0			0	0	1		0	6			0	0	0		0	0			0	0	0		0	1	
8/03		0		0	0	0	1			0		0	0	0	1			0		0	0	0	0			0		0	0	0	1	
8/04		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0
8/05		0		0	0	0	1	0		0		0	0	0	1	1		0		0	0	0	0	0		0		0	0	0	1	0
8/06		0		0	0	0	0	1		0		0	0	0	1	0		0		0	0	1	0	0		0		0	0	0	0	0
8/07		0		0	0	0	1	0		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0
8/08		0		0	0	0	0	1		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0
8/09		0		0	0	0	0	0		0		0	0	0	1	1		0		0	0	0	0	0		0		0	0	0	0	0
8/10		0		0	0	0	0	0		0		0	0	0	0	3		0		0	0	0	0	0		0		0	0	0	0	0
8/11		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0		0		0	0	0	0	0
8/12		0		0	0	1	0	0		0		0	2	1	0	1		0		0	0	0	0	1		0		0	0	0	0	0
8/13		0		0	0	0	0	0		0		1	0	2	4	2		0		0	0	0	0	0		0		0	0	0	0	0

-Continued-

Table 5. (page 2 of 2)

	Whitefish							
Date	1996	1997	1998	1999	2000	2001	2002	2003
8/14		0		0	0	0	0	0
8/15		0		0	0	0	1	
8/16		0		0	0	3	0	
8/17		0		0	0	0	0	
8/18		0		0	0	0	3	0
8/19		0		0	0		0	0
8/20		0		0	0		0	0
8/21		0		0	0		0	0
8/22		0		0	0		0	1
8/23		0		0	0		0	0
8/24		0		0	0		0	0
8/25		0		0	0		0	0
8/26		0		0	0		0	0
8/27		0		0	0	2	3	0
8/28		0		0	0	2	2	0
8/29		0		0	0	0	0	0
8/30		0		0	0	2	0	1
8/31		0		0	0	0	1	0
9/01		0		0	0	2	0	0
9/02		0		0	0	0	0	0
9/03		1		0	0	0	0	0
9/04		0		0	0	0	3	0
9/05		0		0	0	0	1	0
9/06		0		0	0	0	1	0
9/07		0		0	0	0	3	0
9/08		0		0	0	0	1	0
9/09		0		0	0	4	0	1
9/10		0		0	0	1	0	0
9/11		0		0	0	0	1	0
9/12		0		0	0	0	1	0
9/13		0		0	0	0	0	0
9/14		0		0	0	3	0	0
9/15		0		0	0	0	0	2
9/16				0	0	0	0	0
9/17				0		2	2	0
9/18				0		2	2	0
9/19				0		0	0	0
9/20				0		0	2	
Total	0	1	0	0	3	105	192	79

	Grayling							
Date	1996	1997	1998	1999	2000	2001	2002	2003
8/14		0		0	0	0	5	0
8/15		0		0	0	0	5	
8/16		0		0	0	0	2	
8/17		0		0	0	0	1	
8/18		0		0	0	0	1	0
8/19		0		0	1		3	0
8/20		0		0	0		1	0
8/21		0		0	0		2	1
8/22		0		0	0		3	2
8/23		0		0	0		2	0
8/24		0		0	0		2	3
8/25		0		0	0		4	1
8/26		1		0	0		1	2
8/27		0		0	0	0	7	2
8/28		0		1	0	0	3	0
8/29		0		0	0	0	6	4
8/30		0		0	0	0	3	3
8/31		0		0	0	0	3	1
9/01		0		0	0	1	0	3
9/02		0		0	0	1	0	3
9/03		0		0	0	0	0	0
9/04		0		0	0	0	8	0
9/05		0		0	0	0	3	0
9/06		0		0	0	0	5	3
9/07		0		0	0	0	3	0
9/08		0		0	0	2	1	0
9/09		0		0	0	1	2	1
9/10		0		0	0	0	0	1
9/11		0		0	0	0	0	0
9/12		0		0	0	0	0	2
9/13		0		0	0	0	0	5
9/14		0		0	0	0	0	0
9/15		0		0	0	0	0	0
9/16				0	0	0	0	0
9/17				0		0	1	0
9/18				0		0	1	0
9/19				0		0	0	0
9/20				0		0	4	
Total	0	1	6	3	75	85	143	58

	Northern Pike							
Date	1996	1997	1998	1999	2000	2001	2002	2003
8/14		0		0	0	0	0	0
8/15		0		0	0	0	0	
8/16		0		0	0	0	0	
8/17		0		0	0	0	0	
8/18		0		1	0	0	0	0
8/19		0		0	0		0	0
8/20		0		0	0		0	0
8/21		0		0	0		0	0
8/22		0		0	0		1	0
8/23		0		0	0		0	0
8/24		0		0	0		0	0
8/25		0		0	0		0	0
8/26		0		0	0		0	0
8/27		0		0	0	0	0	0
8/28		0		0	0	0	0	0
8/29		0		0	0	0	0	0
8/30		0		0	0	0	0	0
8/31		0		0	0	0	0	0
9/01		0		0	0	0	0	0
9/02		0		0	0	0	1	0
9/03		0		0	0	0	0	0
9/04		0		0	0	0	0	0
9/05		0		0	0	0	0	0
9/06		0		0	0	0	0	0
9/07		0		0	0	0	0	0
9/08		0		0	0	0	0	0
9/09		0		1	0	0	0	0
9/10		0		0	0	0	0	0
9/11		0		0	0	0	1	0
9/12		0		0	0	0	0	0
9/13		0		0	0	0	0	0
9/14		0		0	0	0	0	0
9/15		0		0	0	0	0	0
9/16				0	0	0	0	0
9/17				0		0	0	0
9/18				0		0	0	0
9/19				0		0	0	0
9/20				0		0	0	
Total	0	0	1	2	0	2	20	1

	Char							
Date	1996	1997	1998	1999	2000	2001	2002	2003
8/14		0		0	0	0	0	0
8/15		0		0	0	0	0	
8/16		0		0	0	0	1	
8/17		0		0	0	0	0	
8/18		0		0	0	0	1	0
8/19		0		0	0		1	0
8/20		0		0	0		1	0
8/21		0		0	0		0	0
8/22		0		0	0		0	0
8/23		0		0	0		0	0
8/24		0		0	0		0	0
8/25		0		0	0		0	0
8/26		0		0	0		0	0
8/27		0		0	0	0	0	0
8/28		0		0	0	0	0	0
8/29		0		0	0	0	1	0
8/30		0		0	0	0	0	0
8/31		0		0	0	0	0	0
9/01		0		0	0	0	0	0
9/02		0		0	0	0	0	0
9/03		0		0	0	0	0	0
9/04		0		0	0	0	0	0
9/05		0		0	0	0	0	0
9/06		0		0	0	0	0	0
9/07		0		0	0	0	0	0
9/08		0		0	0	0	0	0
9/09		0		0	0	0	0	0
9/10		0		0	0	0	0	0
9/11		0		0	0	0	0	0
9/12		0		0	0	0	0	0
9/13		0		0	0	0	0	0
9/14		0		0	0	0	0	0
9/15		0		0	0	0	0	0
9/16				0	0	0	0	0
9/17				0		0	0	0
9/18				0		0	0	0
9/19				0		0	0	0
9/20				0		0	0	
Total	0	0	0	0	0	0	23	0

(shaded) = Weir was not operational

Table 6. Historical longnose sucker passage at George River weir.

Date	Daily 1996	Daily 1997	Daily 1998	Daily 1999	Daily 2000	Daily 2001	Daily 2002	Daily 2003	Cumulative 1996	Cumulative 1997	Cumulative 1998	Cumulative 1999	Cumulative 2000	Cumulative 2001	Cumulative 2002	Cumulative 2003	% Passage 1996	% Passage 1997	% Passage 2000	% Passage 2001	% Passage 2002
6/15	c	429	c	c	c	c	c	c		429								7			
6/16	c	262 a	c	c	c	c	c	c		691								11			
6/17	c	68	c	c	45 d	c	c	c		759			45					12	1		
6/18	c	223	c	c	348	c	c	c		982			393					15	5		
6/19	c	100	c	c	34	c	c	c		1,082			427					17	6		
6/20	c	0	c	c	73	c	c	c		1,082			500					17	7		
6/21	519	276	c	c	238	c	25 d	c	519	1,358			738		25		15	21	10		0
6/22	832	70	2 d	c	343	c	344	c	1,351	1,428	2		1,081		369		38	22	14		6
6/23	703	204	46	c	927	c	700	c	2,054	1,632	48		2,008		1,069		58	25	26		17
6/24	238	72	218	c	686	c	44	c	2,292	1,704	266		2,694		1,113		65	27	35		17
6/25	285	120	106	c	1,204	29 d	132	c	2,577	1,824	372		3,898	29	1,245		73	28	51	0	20
6/26	62	162	688	c	130	819	118	c	2,639	1,986	1,060		4,028	848	1,363		74	31	52	5	21
6/27	285	285	921	c	262	1,439	90	c	2,924	2,271	1,981		4,290	2,287	1,453		83	36	56	14	23
6/28	2	366	987	c	6	2,105	236	c	2,926	2,637	2,968		4,296	4,392	1,689		83	41	56	28	26
6/29	1 a	336	877	c	8	5,831	10	c	2,927	2,973	3,845		4,304	10,223	1,699		83	46	56	65	27
6/30	0	245	1,102	c	0	369	88	c	2,927	3,218	4,947		4,304	10,592	1,787		83	51	56	67	28
7/01	1	491	472	c	8	88	150	566 d	2,928	3,709	5,419		4,312	10,680	1,937	566	83	58	56	67	30
7/02	15 a	215	115	c	9	905	3	152 d	2,943	3,924	5,534		4,321	11,585	1,940	718	83	61	56	73	30
7/03	29	405	330	c	395	5	24	c	2,972	4,329	5,864		4,716	11,590	1,964	718	84	68	61	73	31
7/04	0	305	119	c	324	14	2	c	2,972	4,634	5,983		5,040	11,604	1,966	718	84	72	66	73	31
7/05	25	205	195	c	965	32	16	c	2,997	4,839	6,178		6,005	11,636	1,982	718	85	76	78	73	31
7/06	43	176	101	c	24	8	189	c	3,040	5,015	6,279		6,029	11,644	2,171	718	86	79	78	74	34
7/07	19	74	16 d	c	400	241	432	c	3,059	5,089	6,295		6,429	11,885	2,603	718	86	79	84	75	41
7/08	2	301	c	c	12	200	449	161	3,061	5,390			6,441	12,085	3,052	879	86	84	84	76	48
7/09	149	4	c	c	107	842	87	591	3,210	5,394			6,548	12,927	3,139	1,470	91	84	85	82	49
7/10	2	79	c	c	13	168	358	131	3,212	5,473			6,561	13,095	3,497	1,601	91	85	85	83	55
7/11	6	6	c	c	261	494	353	6	3,218	5,479			6,822	13,589	3,850	1,607	91	86	89	86	60
7/12	1	109	c	c	576	331	333	29	3,219	5,588			7,398	13,920	4,183	1,636	91	87	96	88	66
7/13	3	24	c	c	184	164	232	20	3,222	5,612			7,582	14,084	4,415	1,656	91	88	99	89	69
7/14	0	31	c	54	0	219	46	15	3,222	5,643		54	7,582	14,303	4,461	1,671	91	88	99	90	70
7/15	21	2	c	42	66	38	98	126	3,243	5,645		96	7,648	14,341	4,559	1,797	92	88	99	91	72
7/16	15	0	c	25	1	57	409	5	3,258	5,645		121	7,649	14,398	4,968	1,802	92	88	99	91	78
7/17	15	39	c	20	0	4	265	1	3,273	5,684		141	7,649	14,402	5,233	1,803	92	89	99	91	82
7/18	15	1	c	9	0	129	236	0	3,288	5,685		150	7,649	14,531	5,469	1,803	93	89	99	92	86
7/19	0	10	c	14	2	92	132	19	3,288	5,695		164	7,651	14,623	5,601	1,822	93	89	100	92	88
7/20	8	420	c	18	1	148	3	694	3,296	6,115		182	7,652	14,771	5,604	2,516	93	96	100	93	88
7/21	146	76	c	4	2	178	27	819	3,442	6,191		186	7,654	14,949	5,631	3,335	97	97	100	94	88
7/22	102	25	c	4	2	81	14	115	3,544	6,216		190	7,656	15,030	5,645	3,450	100	97	100	95	89
7/23	0	72	c	3	4	66	46	51	3,544	6,288		193	7,660	15,096	5,691	3,501	100	98	100	95	89
7/24	0	5	c	0	1	79	41	10	3,544	6,293		193	7,661	15,175	5,732	3,511	100	98	100	96	90
7/25	0	21	c	2	7	30	11	29	3,544	6,314		195	7,668	15,205	5,743	3,540	100	99	100	96	90
7/26	0	0	c	3	6	19	8	1	3,544	6,314		198	7,674	15,224	5,751	3,541	100	99	100	96	90
7/27	c	0	c	2	4	33	4	2		6,314		200	7,678	15,257	5,755	3,543		99	100	96	90
7/28	c	6	c	0	0	32	5	0 b		6,320		200	7,678	15,289	5,760	3,543		99	100	97	90
7/29	c	4	c	0	0	54	18	0 b		6,324		200	7,678	15,343	5,778	3,543		99	100	97	91
7/30	c	6	8	0	0	8	18	0 b		6,330	6,303	200	7,678	15,351	5,796	3,543		99	100	87	91
7/31	c	17	4	0	1	8	64	0 b		6,347	6,307	200	7,679	15,359	5,860	3,543		99	100	97	92
8/01	c	2	270	0	0 e	72	50	0 b		6,349	6,577	200	7,679 b	15,431	5,910	3,543		99	100	97	93
8/02	c	0	55	0	1 b	20	9	0 b		6,349	6,632	200	7,680 b	15,451	5,919	3,543		99	100	98	93
8/03	c	0	c	0	2	6	107	0 b		6,349		200	7,682	15,457	6,026	3,543		99	100	98	95
8/04	c	1	c	0	1	0	20	0 b		6,350		200	7,683	15,457	6,046	3,543		99	100	98	95
8/05	c	0	c	4	1 b	8	19	0		6,350		204	7,684 b	15,465	6,065	3,543		99	100	98	95
8/06	c	0	c	0	0	11	14	0		6,350		204	7,684	15,476	6,079	3,543		99	100	98	95
8/07	c	0	c	0	0	12	15	0		6,350		204	7,684	15,488	6,094	3,543		99	100	98	96
8/08	c	0	c	0	0	147	4	1		6,350		204	7,684	15,635	6,098	3,544		99	100	99	96
8/09	c	0	c	2	0	13	2	3		6,350		206	7,684	15,648	6,100	3,547		99	100	99	96

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Table 6. (page 2 of 2)

Date	Daily								Cumulative								% Passage				
	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	2000	2001	2002
8/10	c	0	c	0	0	1	3	10		6,350		206	7,684	15,849	6,103	3,557		99	100	99	96
8/11	c	0	c	1	0	9	6	13		6,350		207	7,684	15,658	6,109	3,570		98	100	99	96
8/12	c	0	c	0	0	4	2	5		6,350		207	7,684	15,662	6,111	3,575		99	100	99	96
8/13	c	0	c	0	3	62	3	2		6,350		207	7,687	15,724	6,114	3,577		99	100	99	96
8/14	c	0	c	0	0	3	15	3		6,350		207	7,687	15,727	6,129	3,580		99	100	99	96
8/15	c	0	c	0	0	19	6	0 b		6,350		207	7,687	15,746	6,135	3,580		99	100	99	96
8/16	c	0	c	0	0	39	7	0 b		6,350		207	7,687	15,785	6,142	3,580		99	100	100	96
8/17	c	0	c	0	0	5	10	0 b		6,350		207	7,687	15,790	6,152	3,580		99	100	100	97
8/18	c	0	c	3	0	12	11	0 b		6,350		210	7,687	15,802	6,163	3,580		99	100	100	97
8/19	c	0	c	2	0	7 b	2	0		6,350		212	7,687	15,809	6,165	3,580		99	100	100	97
8/20	c	0	c	0	0	6 b	5	0		6,350		212	7,687	15,815	6,170	3,580		99	100	100	97
8/21	c	0	c	0	0	5 b	2	0		6,350		212	7,687	15,820	6,172	3,580		99	100	100	97
8/22	c	0	c	0	0	4 b	5	0		6,350		212	7,687	15,824	6,177	3,580		99	100	100	97
8/23	c	0	c	1	0	4 b	12	0		6,350		213	7,687	15,828	6,189	3,580		99	100	100	97
8/24	c	0	c	4	0	3 b	14	4		6,350		217	7,687	15,831	6,203	3,584		99	100	100	97
8/25	c	0	c	2	0	2 b	26	7		6,350		219	7,687	15,833	6,229	3,591		99	100	100	98
8/26	c	1	c	2	1	1 b	9	1		6,351		221	7,688	15,834	6,238	3,592		99	100	100	98
8/27	c	13	c	1	0	0	23	9		6,364		222	7,688	15,834	6,261	3,601		99	100	100	98
8/28	c	6	c	2	0	1	19	2		6,370		224	7,688	15,835	6,280	3,603		99	100	100	99
8/29	c	1	c	1	0	0	6	6		6,371		225	7,688	15,835	6,286	3,609		99	100	100	99
8/30	c	21	c	2	0	0	3	1		6,392		227	7,688	15,835	6,289	3,610		100	100	100	99
8/31	c	2	c	1	0	3	7	5		6,394		228	7,688	15,838	6,296	3,615		100	100	100	99
9/01	c	0	c	2	0	1	6	8		6,394		230	7,688	15,839	6,302	3,623		100	100	100	99
9/02	c	0	c	2	0	1	4	0		6,394		232	7,688	15,840	6,306	3,623		100	100	100	99
9/03	c	7	c	2	0	0	5	1		6,401		234	7,688	15,840	6,311	3,624		100	100	100	99
9/04	c	0	c	2	0	0	16	0		6,401		236	7,688	15,840	6,327	3,624		100	100	100	99
9/05	c	0	c	3	0	0	1	0		6,401		239	7,688	15,840	6,328	3,624		100	100	100	99
9/06	c	0	c	0	0	0	6	0		6,401		239	7,688	15,840	6,334	3,624		100	100	100	99
9/07	c	0	c	0	0	0	2	0		6,401		239	7,688	15,840	6,336	3,624		100	100	100	99
9/08	c	0	c	0	0	0	2	0		6,401		239	7,688	15,840	6,338	3,624		100	100	100	99
9/09	c	0	c	0	0	0	4	0		6,401		239	7,688	15,840	6,342	3,624		100	100	100	99
9/10	c	0	c	0	0	0	2	0		6,401		239	7,688	15,840	6,344	3,624		100	100	100	100
9/11	c	0	c	0	0	0	3	0		6,401		239	7,688	15,840	6,347	3,624		100	100	100	100
9/12	c	0	c	0	0	0	10	0		6,401		239	7,688	15,840	6,357	3,624		100	100	100	100
9/13	c	1	c	2	0	0	2	0		6,402		241	7,688	15,840	6,359	3,624		100	100	100	100
9/14	c	0	c	0	0	0	0	0		6,402		241	7,688	15,840	6,359	3,624		100	100	100	100
9/15	c	2	c	0	0	0	1	0		6,404		241	7,688	15,840	6,360	3,624		100	100	100	100
9/16	c	c	c	1	0	0	5	0				242	7,688	15,840	6,365	3,624			100	100	100
9/17	c	c	c	1	c	0	6	0				243		15,840	6,371	3,624				100	100
9/18	c	c	c	1	c	0	3	0				244		15,840	6,374	3,624				100	100
9/19	c	c	c	2	c	0	0	0				246		15,840	6,374	3,624				100	100
9/20	c	c	c	0	c	0	0	0 b				246		15,840	6,374	3,624				100	100
Total	3,544	6,404	6,632	246	7,688	15,840	6,374	3,624													
Obs.	3,528	7,892	6,632	278	7,686	15,808	6,374	3,624													
Est (%)	0.5	2.5	0.0	0.0	0.0	0.2	0.0	0.0													

a = Daily passage was estimated due to the occurance of a hole in the weir.
b = The weir was not operational; daily passage was estimated.
c = The weir was not operational; daily passage was not estimated
d = Partial day count, passage was not estimated.
e = Partial day count, passage was estimated.

Table 7. Age and sex of chinook salmon at the George River weir based on escapement samples collected with a fish trap. [a,b]

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 1.2 (4) Esc.	%	1.3 (5) Esc.	%	2.2 (5) Esc.	%	1.4 (6) Esc.	%	1.5 (7) Esc.	%	Total Esc.	%
1996	6/24 - 25 (6/15 - 6/26)	44	M	161	11.4	419	29.6	32	2.3	129	9.1	65	4.6	806	56.8
			F	0	0.0	97	6.8	0	0.0	322	22.7	193	13.6	612	43.2
			Subtotal	161	11.4	516	36.4	32	2.3	451	31.8	258	18.2	1,418	100.0
	6/28, 7/2 (6/27 - 7/4)	57	M	51	1.8	460	15.8	0	0.0	715	24.6	459	15.8	1,685	57.9
			F	0	0.0	102	3.5	0	0.0	511	17.5	613	21.0	1,226	42.1
			Subtotal	51	1.8	562	19.3	0	0.0	1,226	42.1	1,072	36.8	2,911	100.0
	7/7, 9 (7/5 - 8/22)	90	M	339	10.0	602	17.8	0	0.0	527	15.6	339	10.0	1,807	53.3
			F	0	0.0	113	3.3	0	0.0	866	25.5	602	17.8	1,581	46.7
			Subtotal	339	10.0	715	21.1	0	0.0	1,393	41.1	941	27.8	3,388	100.0
	Season	191	M	551	7.1	1,481	19.2	32	0.4	1,371	17.8	863	11.2	4,298	55.7
			F	0	0.0	312	4.0	0	0.0	1,699	22.0	1,408	18.2	3,419	44.3
			Total	551	7.1	1,793	23.2	32	0.4	3,070	39.8	2,271	29.4	7,717	100.0
1997	6/24, 26, 27 (6/15 - 27)	64	M	758	28.1	379	14.1	0	0.0	421	15.6	0	0.0	1,557	57.8
			F	0	0.0	84	3.1	0	0.0	1,052	39.1	0	0.0	1,137	42.2
			Subtotal	758	28.1	463	17.2	0	0.0	1,473	54.7	0	0.0	2,694	100.0
	6/28 - 30 (6/28 - 7/3)	87	M	1,156	37.9	315	10.3	0	0.0	560	18.4	0	0.0	2,031	66.7
			F	0	0.0	35	1.2	0	0.0	981	32.2	0	0.0	1,016	33.3
			Subtotal	1,156	37.9	350	11.5	0	0.0	1,541	50.6	0	0.0	3,047	100.0
	7/7 - 11 (7/4 - 12)	69	M	522	39.1	39	2.9	0	0.0	290	21.8	0	0.0	850	63.8
			F	0	0.0	0	0.0	0	0.0	483	36.2	0	0.0	483	36.2
			Subtotal	522	39.1	39	2.9	0	0.0	773	58.0	0	0.0	1,333	100.0
	7/14 - 18; 21, 23, 27 (7/13 - 8/22)	49	M	275	36.7	46	6.1	0	0.0	138	18.4	0	0.0	459	61.2
			F	0	0.0	15	2.1	0	0.0	275	36.7	0	0.0	290	38.8
			Subtotal	275	36.7	61	8.2	0	0.0	413	55.1	0	0.0	749	100.0
	Season	269	M	2,710	34.6	779	10.0	0	0.0	1,409	18.0	0	0.0	4,897	62.6
			F	0	0.0	134	1.7	0	0.0	2,791	35.7	0	0.0	2,926	37.4
			Total	2,710	34.6	913	11.7	0	0.0	4,200	53.7	0	0.0	7,823	100.0
1998 [c]	6/30- 7/1	49	M		36.7		34.7		0.0		6.1		0.0		77.6
			F		0.0		14.3		0.0		8.2		0.0		22.4
			Subtotal		36.7		49.0		0.0		14.3		0.0		100.0
	7/6	26	M		19.2		42.3		0.0		3.8		0.0		65.4
			F		0.0		11.5		0.0		23.1		0.0		34.6
			Subtotal		19.2		53.8		0.0		26.9		0.0		100.0
	Season	75	M		30.7		37.3		0.0		5.3		0.0		73.3
			F		0.0		13.3		0.0		13.3		0.0		26.7
			Total	1,443	30.7	2,383	50.7		0.0	879	18.7		0.0	4,700	100.0
1999 [d]	7/18-19 (7/15 - 7/20)	32	M		9.4		9.4		0.0		37.5		0.0		56.3
			F		0.0		12.5		0.0		31.3		0.0		43.8
			Subtotal		9.4		21.9		0.0		68.8		0.0		100.0
	7/24 (7/21 - 9/12)	22	M		9.1		4.5		0.0		18.2		0.0		31.8
			F		0.0		0.0		0.0		68.2		0.0		68.2
			Subtotal		9.1		4.5		0.0		86.4		0.0		100.0
	Season	54	M		9.3		7.4		0.0		29.6		0.0		46.3
			F		0.0		7.4		0.0		46.3		0.0		53.7
			Total	330	9.3	525	14.8		0.0	2,693	75.9		0.0	3,548	100.0
2000 [d]	7/4-5	51	M		7.8		9.8		0.0		27.5		0.0		45.1
			F		0.0		7.8		0.0		47.1		0.0		54.9
			Total		7.8		17.6		0.0		74.5		0.0		100.0

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Table 7. (page 2 of 2).

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class											
				1.2 (4)		1.3 (5)		2.2 (5)		1.4 (6)		1.5 (7)		Total	
				Esc.	%	Esc.	%	Esc.	%	Esc.	%	Esc.	%	Esc.	%
2000 [d] (Cont.)	7/11, 21	21	M		9.5		14.3		0.0		23.8		4.8		52.4
			F		4.8		14.3		0.0		28.6		0.0		47.6
			Subtotal		14.3		28.6		0.0		52.4		4.8		100.0
	Season	72	M		8.3		11.1		0.0		26.4		1.4		47.2
			F		1.4		9.7		0.0		41.7		0.0		52.8
			Total	287	9.7	616	20.8		0.0	2,016	68.1	41	1.4	2,960	100.0
2001	6/30-7/2 (6/15-7/6)	15	M	158	13.3	714	60.0	0	0.0	238	20.0	0	0.0	1,110	93.3
			F	0	0.0	0	0.0	0	0.0	80	6.7	0	0.0	80	6.7
			Total	158	13.3	714	60.0	0	0.0	318	26.7	0	0.0	1,190	100.0
	7/8-10 (7/7-12)	24	M	103	8.3	258	20.8	0	0.0	310	25.0	52	4.2	723	58.3
			F	0	0.0	0	0.0	0	0.0	413	33.3	103	8.3	517	41.7
			Subtotal	103	8.3	258	20.8	0	0.0	723	58.3	155	12.5	1,240	100.0
	7/13-14,17-18,25 (7/13 - 8/28)	23	M	114	13.0	38	4.3	0	0.0	191	21.7	38	4.3	382	43.5
			F	39	4.4	0	0.0	0	0.0	382	43.5	76	8.7	497	56.5
			Subtotal	153	17.4	38	4.3	0	0.0	573	65.2	114	13.0	879	100.0
	Season	62	M	359	11.4	1,013	30.6	0	0.0	738	22.3	89	2.7	2,217	67.0
			F	36	1.1	0	0.0	0	0.0	877	26.5	179	5.4	1,092	33.0
			Total	414	12.5	1,013	30.6	0	0.0	1,615	48.8	268	8.1	3,309	100.0
2002	6/25 - 30 (6/15 - 30)	110	M	160	24.5	83	12.7	0	0.0	249	38.2	0	0.0	492	75.5
			F	0	0.0	0	0.0	0	0.0	130	20.0	30	4.5	160	24.5
			Subtotal	160	24.5	83	12.7	0	0.0	379	58.2	30	4.5	652	100.0
	7/1 - 3 (7/1 - 6)	77	M	19	2.6	123	16.9	0	0.0	208	28.6	19	2.6	369	50.6
			F	0	0.0	19	2.6	0	0.0	275	37.6	66	9.1	360	49.4
			Subtotal	19	2.6	142	19.5	0	0.0	483	66.2	85	11.7	729	100.0
	7/10 - 14 (7/7 - 15)	64	M	88	12.5	110	15.6	0	0.0	176	25.0	33	4.7	407	57.8
			F	0	0.0	11	1.6	0	0.0	264	37.5	22	3.1	297	42.2
			Subtotal	88	12.5	121	17.2	0	0.0	440	62.5	55	7.8	704	100.0
	7/17 - 21 (7/16 - 22)	44	M	33	15.9	56	27.3	0	0.0	37	18.2	5	2.3	130	63.6
			F	0	0.0	0	0.0	0	0.0	56	27.3	18	9.1	75	36.4
			Subtotal	33	15.9	56	27.3	0	0.0	93	45.5	23	11.4	205	100.0
	7/24 - 27, 30 - 31, 8/1 - 2, 8 (7/23 - 9/20)	20	M	8	5.0	46	30.0	0	0.0	0	0.0	0	0.0	54	35.0
			F	0	0.0	0	0.0	0	0.0	92	60.0	8	5.0	100	65.0
			Subtotal	8	5.0	46	30.0	0	0.0	92	60.0	8	5.0	154	100.0
	Season	315	M	307	12.6	418	17.1	0	0.0	671	27.4	57	2.3	1,453	59.4
			F	0	0.0	30	1.2	0	0.0	817	33.5	144	5.9	991	40.6
			Total	307	12.6	448	18.3	0	0.0	1,488	60.9	201	8.2	2,444	100.0
2003 [d]	7/16, 7/18, 7/20, 7/22	23	M		8.7		17.4		0.0		34.8		4.4		65.2
			F		0.0		0.0		0.0		21.7		13.0		34.8
			Subtotal		8.7		17.4		0.0		56.5		17.4		100.0
	Season	23	M		8.7		17.4		0.0		34.8		4.4		65.2
			F		0.0		0.0		0.0		21.7		13.0		34.8
			Total	408	8.7	817	17.4	0	0.0	2,652	56.5	817	17.4	4,693	100.0
Grand Total [e]		775	M	2698	12.9	3149	15.1	30	0.1	3891	18.6	968	4.6	10735	51.4
			F	1203	5.8	764	3.7	0	0	6285	30.1	1913	9.2	10167	48.6
			Total	3902	18.7	3913	18.7	30	0.1	10176	48.7	2881	13.8	20902	100

[a] The number of fish in each stratum age and sex category are derived from the sample percentages; discrepancies in sums are attributed to rounding errors.

[b] The number of fish in "Season" summaries are the strata sums; "Season" percentages are derived from the sums.

[c] The weir washed out in 1998, ASL composition of escapement was not estimated.

[d] Sampling dates do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[e] The number of fish in the "Grand Total" are the sum of the "Season" totals; percentages are derived from those sums.

Table 8. Mean length (mm) of chinook salmon at the George River weir based on escapement samples collected with a fish trap. [a]

Year	Sample Dates (Stratum Dates)	Sex		1.2 (4)	1.3 (5)	2.2 (5)	1.4 (6)	1.5 (7)
				Age Class				
1996	6/24 - 25 (6/15 - 6/26)	M	Mean Length	546	675	600	823	807
			Std. Error	30	13	-	27	148
			Range	500- 664	575- 734	600- 600	742- 860	659- 955
			Sample Size	5	13	1	4	2
		F	Mean Length		782		894	880
			Std. Error		33		17	38
			Range		742- 848		812- 963	724- 986
			Sample Size	0	3	0	10	6
	6/28, 7/2 (6/27 - 7/4)	M	Mean Length	620	716		880	912
			Std. Error	-	12		24	31
			Range	620- 620	664- 775		669 - 981	710- 998
			Sample Size	1	9	0	14	9
		F	Mean Length		814		854	922
			Std. Error		35		15	12
			Range		779- 848		785 - 938	859- 987
			Sample Size	0	2	0	10	12
	7/7, 9 (7/5 - 8/22)	M	Mean Length	601	724		830	919
			Std. Error	33	20		24	33
			Range	520- 775	595- 885		640- 972	714- 1010
			Sample Size	9	16	0	14	9
		F	Mean Length		820		853	909
			Std. Error		33		9	11
			Range		767- 879		749- 925	939- 1000
			Sample Size	0	3	0	23	16
	Season	M	Mean Length	587	708	600	855	907
			Range	500- 775	575- 885	600- 600	640- 981	659- 1010
			Sample Size	15	38	1	32	20
		F	Mean Length		806		861	911
			Range		742- 879		749- 963	724- 1000
			Sample Size	0	8	0	43	34
1997	6/24, 26, 27 (6/15 - 27)	M	Mean Length	589	739		840	
			Std. Error	12	22		21	
			Range	504- 669	660- 820		713- 923	
			Sample Size	18	9	0	10	0
		F	Mean Length		745		861	
			Std. Error		16		7	
			Range		729- 761		794- 967	
			Sample Size	0	2	0	25	0
	6/28 - 30 (6/28 - 7/3)	M	Mean Length	560	720		816	
			Std. Error	12	15		15	
			Range	425- 718	634- 778		700- 895	
			Sample Size	33	9	0	16	0

-Continued-

Table 8. (page 2 of 5)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.2 (4)	1.3 (5)	2.2 (5)	1.4 (6)	1.5 (7)
1997 (cont.)		F	Mean Length		746		841	
			Std. Error		-		7	
			Range		746- 746		760- 923	
			Sample Size	0	1	0	28	0
	7/7 - 11 (7/4 - 12)	M	Mean Length	563	795		851	
			Std. Error	10	35		19	
			Range	470- 638	760- 830		705- 983	
			Sample Size	27	2	0	15	0
		F	Mean Length				843	
			Std. Error				8	
			Range				771- 900	
			Sample Size	0	0	0	25	0
	7/14 - 18; 21, 23, 27 (7/13 - 8/22)	M	Mean Length	556	690		865	
			Std. Error	16	53		27	
			Range	457- 680	594- 777		749- 998	
			Sample Size	18	3	0	9	0
		F	Mean Length		785		843	
			Std. Error		-		11	
			Range		785- 785		735- 914	
			Sample Size	0	1	0	18	0
	Season	M	Mean Length	568	731		835	
			Range	425- 718	594- 830		700- 998	
			Sample Size	96	23	0	50	0
		F	Mean Length		750		849	
			Range		729- 785		735- 967	
			Sample Size	0	4	0	96	0
1998 [b]	6/30- 7/1	M	Mean Length	543	669		794	
			Std. Error	13	13		27	
			Range	420- 641	568- 780		745- 837	
			Sample Size	18	17	0	3	0
		F	Mean Length		726		852	
			Std. Error		28		24	
			Range		612- 840		788- 905	
			Sample Size	0	7	0	4	0
	7/6	M	Mean Length	539	689		785	
			Std. Error	21	20		-	
			Range	465- 591	581- 832		785- 785	
			Sample Size	5	11	0	1	0
		F	Mean Length		730		843	
			Std. Error		21		15	
			Range		690- 760		783- 874	
			Sample Size	0	3	0	6	0
1999 [c]	7/18 - 19 (7/15 - 7/20)	M	Mean Length	497	757		803	
			Std. Error	48	74		24	
			Range	415- 580	640- 895		700- 915	
			Sample Size	3	3	0	12	0

-Continued-

Table 8. (page 3 of 5)

Year	Sample Dates (Stratum Dates)	Sex		1.2 (4)	1.3 (5)	2.2 (5)	1.4 (6)	1.5 (7)
				Age Class				
1999 [c] (cont.)		F	Mean Length		844		816	
			Std. Error		23		23	
			Range		805- 905		655- 955	
			Sample Size	0	4	0	10	0
	7/24 (7/21 - 9/12)	M	Mean Length	500	800		915	
			Std. Error	60	-		28	
			Range	440- 560	800- 800		860- 990	
			Sample Size	2	1	0	4	0
		F	Mean Length				852	
			Std. Error				8	
			Range				790- 890	
			Sample Size	0	0	0	15	0
2000 [c]	7/4-5	M	Mean Length	529	731		871	
			Std. Error	23	43		16	
			Range	490-580	650-835		785-965	
			Sample Size	4	5	0	14	0
		F	Mean Length		765		846	
			Std. Error		12		13	
			Range		740-785		725-945	
			Sample Size	0	4	0	24	0
	7/11, 21	M	Mean Length	585	700		845	940
			Std. Error	85	64		35	-
			Range	500-670	600-820		770-940	940-940
			Sample Size	2	3	0	5	1
		F	Mean Length	580	807		858	
			Std. Error	-	19		28	
			Range	580-580	770-830		800-980	
			Sample Size	1	3	0	6	0
2001	6/30-7/2 (6/15-7/6)	M	Mean Length	602	638		788	
			Std. Error	6	15		72	
			Range	596-608	584-736		684-925	
			Sample Size	2	9	0	3	0
		F	Mean Length				792	
			Std. Error				-	
			Range				792-792	
			Sample Size	0	0	0	1	0
	7/8-10 (7/7-12)	M	Mean Length	551	658		870	820
			Std. Error	36	16		29	-
			Range	515-587	605-687		767-965	820-820
			Sample Size	2	5	0	6	1
		F	Mean Length				806	876
			Std. Error				21	38
			Range				734-873	838-914
			Sample Size	0	0	0	8	2

-Continued-

Table 8. (page 4 of 5)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.2 (4)	1.3 (5)	2.2 (5)	1.4 (6)	1.5 (7)
2001 (cont.)	7/13-14,17-18,25 (7/13 - 8/28)	M	Mean Length	535	765		887	1015
			Std. Error	47	-		23	-
			Range	461-622	765-765		842-960	1015-1015
			Sample Size	3	1	0	5	1
		F	Mean Length	458			845	880
			Std. Error	-			17	1
			Range	458-458			767-907	878-881
			Sample Size	1	0	0	10	2
	Season	M	Mean Length	568	648		848	903
			Range	461-622	584-765		684-965	820-1015
			Sample Size	7	15	0	14	2
		F	Mean Length	458			822	877
			Range	458-458			734-907	838-914
			Sample Size	1	0	0	19	4
2002	6/25 - 30 (6/15 - 30)	M	Mean Length	492	663		793	
			Std Error	9	14		11	
			Range	402- 580	592- 761		635- 940	
			Sample Size	27	14	0	42	0
		F	Mean Length				855	883
			Std Error				12	19
			Range				747- 950	816- 928
			Sample Size	0	0	0	22	5
	7/1 - 3 (7/1 - 6)	M	Mean Length	474	708		835	939
			Std Error	4	16		14	31
			Range	470- 478	668- 880		670- 946	908- 970
			Sample Size	2	13	0	22	2
		F	Mean Length		709		843	898
			Std Error		67		10	9
			Range		642- 775		680- 930	866- 925
			Sample Size	0	2	0	29	7
	7/10 - 14 (7/7 - 15)	M	Mean Length	470	696		837	861
			Std Error	20	16		17	30
			Range	372- 569	613- 761		720- 955	811- 914
			Sample Size	8	10	0	16	3
		F	Mean Length		543		837	895
			Std Error		-		8	2
			Range		543- 543		764- 935	893- 897
			Sample Size	0	1	0	24	2
	7/17 - 21 (7/16 - 22)	M	Mean Length	462	696		796	903
			Std Error	30	16		19	-
			Range	362- 621	588- 787		716- 894	903- 903
			Sample Size	7	12	0	8	1
		F	Mean Length				834	933
			Std Error				12	16
			Range				773- 914	896- 973
			Sample Size	0	0	0	12	4

-Continued-

Table 8. (page 5 of 5)

Year	Sample Dates (Stratum Dates)	Sex		1.2 (4)	1.3 (5)	2.2 (5)	1.4 (6)	1.5 (7)
				Age Class				
2002 (cont.)	7/24 - 27, 30 - 31, 8/1 - 2, 8 (7/23 - 9/20)	M	Mean Length	460	693			
			Std Error	-	29			
			Range	460- 460	601- 807			
			Sample Size	1	6	0	0	0
		F	Mean Length				848	878
			Std Error				8	-
			Range				800- 897	878- 878
			Sample Size	0	0	0	12	1
	Season	M	Mean Length	481	693		818	891
			Range	362- 621	588- 880		635- 955	811- 970
			Sample Size	45	55	0	88	6
		F	Mean Length		648		843	898
			Range		543- 775		680- 950	816- 973
			Sample Size	0	3	0	99	19
2003	7/16, 7/18, 7/20, 7/22	M	Mean Length	604	752		832	994
			Std Error	76	28		23	-
			Range	528- 679	701- 820		735- 930	994- 994
			Sample Size	2	4	0	8	1
		F	Mean Length				885	873
			Std Error				13	29
			Range				848- 920	817- 915
			Sample Size	0	0	0	5	3
	Season	M	Mean Length	604	752		832	994
			Range	528- 679	701- 820		735- 930	994- 994
			Sample Size	2	4	0	8	1
		F	Mean Length				885	873
			Range				848- 920	817- 915
			Sample Size	0	0	0	5	3
	Grand Total [e]	M	Mean Length	558	700	600	838	910
			Range	457-775	575-885	600-600	669-998	812-1010
			Sample Size	130	118	1	181	25
		F	Mean Length	514	702		842	893
			Range	425-645	634-879		640-967	659-1000
			Sample Size	34	28	0	260	60

[a] "Season" mean lengths are weighted by the escapement passage in each stratum.

[b] The weir washed out in 1998, ASL composition of escapement was not determined.

[c] Sampling dates do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[e] The number of fish in the "Grand total" are the sum of the "Season" totals; percentages are derived from those sums.

Table 9. Age and sex of chum salmon at the George River weir based on escapement samples collected with a fish trap. [ab]

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 0.2 (3) Esc.	0.2 (3) %	0.3 (4) Esc.	0.3 (4) %	0.4 (5) Esc.	0.4 (5) %	0.5 (6) Esc.	0.5 (6) %	Total Esc.	Total %
1996	6/22 - 23	47	M	0	0.0	403	10.6	1,295	34.1	243	6.4	1,941	51.1
	(6/15 - 28)		F	80	2.1	809	21.3	969	25.5	0	0.0	1,858	48.9
			Subtotal	80	2.1	1,212	31.9	2,264	59.6	243	6.4	3,798	100.0
	7/5 - 6	177	M	0	0.0	1,804	31.1	1,968	33.9	33	0.6	3,804	65.5
	(6/29 - 7/8)		F	0	0.0	1,115	19.2	885	15.3	0	0.0	2,001	34.5
			Subtotal	0	0.0	2,919	50.3	2,853	49.2	33	0.6	5,805	100.0
	7/11	91	M	50	2.2	700	30.8	375	16.5	25	1.1	1,151	50.5
	(7/9 - 13)		F	75	3.3	726	31.8	325	14.3	0	0.0	1,125	49.5
			Subtotal	125	5.5	1,426	62.6	700	30.8	25	1.1	2,276	100.0
	7/16 - 17	203	M	11	0.5	744	33.0	388	17.2	0	0.0	1,143	50.7
	(7/14 - 18)		F	56	2.5	743	33.0	311	13.8	0	0.0	1,110	49.3
			Subtotal	67	3.0	1,487	66.0	699	31.0	0	0.0	2,253	100.0
	7/20	69	M	0	0.0	645	39.1	143	8.7	0	0.0	789	47.8
	(7/19 - 22)		F	72	4.3	574	34.8	215	13.0	0	0.0	860	52.2
			Subtotal	72	4.3	1,219	73.9	358	21.7	0	0.0	1,649	100.0
	7/25 - 26	178	M	0	0.0	1,398	38.7	303	8.4	43	1.1	1,745	48.3
	(7/23 - 9/12)		F	0	0.0	1,503	41.6	365	10.1	0	0.0	1,868	51.7
			Subtotal	0	0.0	2,901	80.3	668	18.5	43	1.1	3,613	100.0
	Season	765	M	61	0.4	5,694	30.5	4,473	21.7	343	1.9	10,571	54.5
			F	283	1.1	5,470	29.3	3,069	15.1	0	0.0	8,822	45.5
			Total	310	1.5	11,616	59.8	7,137	36.8	330	1.9	19,393	100.0
1997	7/4, 7- 11	95	M	0	0.0	444	23.1	625	32.6	41	2.1	1,109	57.9
	(6/15 - 7/12)		F	0	0.0	302	15.8	484	25.3	20	1.1	807	42.1
			Subtotal	0	0.0	746	38.9	1,109	57.9	62	3.2	1,916	100.0
	7/14 - 18	190	M	0	0.0	380	30.5	387	31.1	13	1.1	780	62.6
	(7/13 - 19)		F	0	0.0	276	22.1	184	14.7	7	0.5	466	37.4
			Subtotal	0	0.0	656	52.6	571	45.8	20	1.6	1,246	100.0
	7/21 - 24	163	M	0	0.0	439	28.8	421	27.6	9	0.6	869	57.1
	(7/20 - 25)		F	0	0.0	346	22.7	308	20.3	0	0.0	654	42.9
			Subtotal	0	0.0	785	51.5	729	47.9	9	0.6	1,523	100.0
	7/27 - 31	125	M	0	0.0	257	38.4	171	25.6	0	0.0	428	64.0
	(7/26 - 8/1)		F	11	1.6	171	25.6	54	8.0	5	0.8	241	36.0
			Subtotal	11	1.6	428	64.0	225	33.6	5	0.8	669	100.0
	8/4 - 6	30	M	0	0.0	76	30.0	42	16.7	0	0.0	118	46.7
	(8/2 - 7)		F	0	0.0	110	43.3	25	10.0	0	0.0	135	53.3
			Subtotal	0	0.0	186	73.3	67	26.7	0	0.0	253	100.0
	8/10 - 13	38	M	16	5.3	40	13.1	16	5.3	0	0.0	71	23.7
	(8/8 - 9/10)		F	16	5.2	197	65.8	16	5.2	0	0.0	229	76.3
			Subtotal	32	10.5	237	78.9	32	10.5	0	0.0	300	100.0

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Table 9. (page 2 of 4)

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 0.2 (3) Esc.	0.2 (3) %	0.3 (4) Esc.	0.3 (4) %	0.4 (5) Esc.	0.4 (5) %	0.5 (6) Esc.	0.5 (6) %	Total Esc.	Total %
1997	Season	641	M	16	0.3	1,635	27.7	1,663	28.2	63	1.1	3,376	57.2
(cont.)			F	26	0.4	1,402	23.7	1,070	18.1	32	0.5	2,531	42.8
			Total	42	0.7	3,037	51.4	2,732	46.3	95	1.6	5,907	100.0
1998 [c]	6/30 - 7/1	166	M		0.0		47.0		10.9		0.0		57.8
			F		0.0		33.7		8.4		0.0		42.2
			Subtotal		0.0		80.7		19.3		0.0		100.0
	7/5 - 6	156	M		0.0		57.0		9.6		0.0		66.7
			F		0.0		27.6		5.1		0.6		33.3
			Subtotal		0.0		84.6		14.7		0.6	6,391	100.0
1999 [d]	(6/24 - 7/14)	0	M										
			F										
			Subtotal										
	7/17 - 19	194	M		0.0		29.9		29.9		0.0		59.8
	(7/15-20)		F		0.0		28.9		11.3		0.0		40.2
			Subtotal		0.0		58.8		41.2		0.0		100.0
	7/23 - 24	198	M		0.0		31.3		17.2		1.0		49.5
	(7/21-28)		F		0.0		34.4		16.1		0.0		50.5
			Subtotal		0.0		65.7		33.3		1.0		100.0
	8/2 - 3	193	M		0.0		32.7		15.0		0.5		48.2
	(7/29-8/6)		F		0.0		37.8		14.0		0.0		51.8
			Subtotal		0.0		70.5		29.0		0.5		100.0
	8/9	26	M		0.0		23.1		23.1		0.0		46.2
	(8/7-9/25)		F		0.0		26.9		26.9		0.0		53.8
			Subtotal		0.0		50.0		50.0		0.0		100.0
	Season	611	M										
			F										
			Total									11,552	
2000	7/4 - 6	67	M	0	0.0	293	23.9	531	43.3	19	1.5	843	68.7
	(6/15 - 7/7)		F	0	0.0	202	16.4	165	13.4	18	1.5	385	31.3
			Subtotal	0	0.0	495	40.3	696	56.7	37	3.0	1,228	100.0
	7/10 - 12	57	M	18	1.8	239	22.8	275	26.3	18	1.8	551	52.6
	(7/8 - 16)		F	0	0.0	238	22.8	257	24.6	0	0.0	495	47.4
			Subtotal	18	1.8	477	45.6	532	50.9	18	1.8	1,046	100.0
	7/21, 24 - 25	86	M	0	0.0	209	24.4	268	31.4	0	0.0	476	55.8
	(7/17 - 26)		F	0	0.0	218	25.6	159	18.6	0	0.0	377	44.2
			Subtotal	0	0.0	427	50.0	427	50.0	0	0.0	853	100.0
	7/28 - 30	25	M	15	4.0	73	20.0	15	4.0	0	0.0	102	28.0
	(7/27 - 9/5)		F	14	4.0	161	44.0	87	24.0	0	0.0	263	72.0
			Subtotal	29	8.0	234	64.0	102	28.0	0	0.0	365	100.0
	Season	235	M	33	1.0	813	23.3	1,089	31.2	37	1.1	1,972	56.5
			F	15	0.4	819	23.4	668	19.1	18	0.5	1,520	43.5
			Total	48	1.4	1,632	46.7	1,757	50.3	55	1.6	3,492	100.0

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Table 9. (page 3 of 4)

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	0.2 (3) Esc.	0.2 (3) %	0.3 (4) Esc.	0.3 (4) %	0.4 (5) Esc.	0.4 (5) %	0.5 (6) Esc.	0.5 (6) %	Total Esc.	Total %
2001	6/30, 7/1	25	M	0	0.0	164	24.0	302	44.0	0	0.0	466	68.0
	(6/15 - 7/4)		F	0	0.0	0	0.0	219	32.0	0	0.0	219	32.0
			Subtotal	0	0.0	164	24.0	521	76.0	0	0.0	685	100.0
	7/9-11, 13-14	200	M	0	0.0	1,050	24.5	1,242	29.0	0	0.0	2,292	53.5
	(7/5 - 15)		F	0	0.0	1,028	24.0	964	22.5	0	0.0	1,992	46.5
			Subtotal	0	0.0	2,078	48.5	2,206	51.5	0	0.0	4,284	100.0
	7/17 - 19	201	M	0	0.0	785	30.8	177	7.0	0	0.0	962	37.8
	(7/16 - 21)		F	0	0.0	1,202	47.3	380	14.9	0	0.0	1,582	62.2
			Subtotal	0	0.0	1,987	78.1	557	21.9	0	0.0	2,544	100.0
	7/24 - 25, 27	201	M	0	0.0	930	39.8	151	6.5	0	0.0	1,082	46.3
	(7/22 - 29)		F	0	0.0	1,024	43.8	233	9.9	0	0.0	1,256	53.7
			Subtotal	0	0.0	1,954	83.6	384	16.4	0	0.0	2,338	100.0
	7/31, 8/2-3, 5, 10	155	M	0	0.0	508	29.1	113	6.4	0	0.0	621	35.5
	(7/30 - 9/19)		F	0	0.0	1,005	57.4	124	7.1	0	0.0	1,129	64.5
			Subtotal	0	0.0	1,513	86.5	237	13.5	0	0.0	1,750	100.0
	Season	782	M	0	0.0	3,437	29.6	1,985	17.1	0	0.0	5,422	46.7
			F	0	0.0	4,259	36.7	1,920	16.6	0	0.0	6,179	53.3
			Total	0	0.0	7,696	66.3	3,905	33.7	0	0.0	11,601	100.0
2002	6/24 - 27	200	M	0	0.0	210	19.5	447	41.5	16	1.5	673	62.5
	(6/15 - 29)		F	0	0.0	92	8.5	280	26.0	32	3.0	404	37.5
			Subtotal	0	0.0	302	28.0	727	67.5	48	4.5	1,077	100.0
	7/1 - 4, 6	218	M	17	0.9	455	24.8	555	30.3	17	0.9	1,044	56.9
	(6/30 - 7/8)		F	0	0.0	370	20.2	421	22.9	0	0.0	791	43.1
			Subtotal	17	0.9	825	45.0	976	53.2	17	0.9	1,835	100.0
	7/10 - 13	193	M	47	2.6	472	25.9	415	22.8	10	0.5	944	51.8
	(7/9 - 15)		F	10	0.5	472	25.9	387	21.2	9	0.5	877	48.2
			Subtotal	57	3.1	944	51.8	802	44.0	19	1.0	1,821	100.0
	7/17 - 19	191	M	90	10.5	175	20.4	130	15.2	4	0.5	399	46.6
	(7/16 - 21)		F	45	5.2	278	32.5	135	15.7	0	0.0	458	53.4
			Subtotal	135	15.7	453	52.9	265	30.9	4	0.5	857	100.0
	7/24 - 27	88	M	51	11.4	82	18.2	51	11.4	0	0.0	185	40.9
	(7/22 - 28)		F	57	12.5	149	32.9	62	13.6	0	0.0	267	59.1
			Subtotal	108	23.9	231	51.1	113	25.0	0	0.0	452	100.0
	7/30 - 8/8	65	M	62	12.3	100	20.0	31	6.2	8	1.5	200	40.0
	(7/29 - 9/20)		F	38	7.7	177	35.4	85	16.9	0	0.0	301	60.0
			Subtotal	100	20.0	277	55.4	116	23.1	8	1.5	501	100.0
	Season	955	M	267	4.1	1,494	22.8	1,630	24.9	54	0.8	3,445	52.7
			F	149	2.3	1,538	23.5	1,369	20.9	42	0.7	3,098	47.3
			Total	416	6.4	3,032	46.3	2,999	45.8	96	1.5	6,543	100.0

-Continued-

Table 9. (page 4 of 4)

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 0.2 (3) Esc.	%	0.3 (4) Esc.	%	0.4 (5) Esc.	%	0.5 (6) Esc.	%	Total Esc.	%
2003	7/11-13	188	M	0	0.0	5,619	50.5	1,006	9.1	59	0.5	6,683	60.1
	(6/15 - 7/15)		F	0	0.0	3,489	31.4	946	8.5	0	0.0	4,436	39.9
			Subtotal	0	0.0	9,108	81.9	1,952	17.6	59	0.5	11,119	100.0
	7/18 - 20	189	M	0	0.0	3,527	41.3	226	2.7	45	0.5	3,798	44.4
	(7/16 - 23)		F	362	4.2	3,889	45.5	497	5.8	0	0.0	4,748	55.6
			Subtotal	362	4.2	7,416	86.8	723	8.5	45	0.5	8,546	100.0
	7/25 - 26	149	M	0	0.0	2,673	34.9	309	4.1	0	0.0	2,981	44.4
	(7/24 - 8/01)		F	51	0.7	4,317	56.4	308	4.0	0	0.0	4,677	55.6
			Subtotal	51	0.7	6,990	91.3	617	8.1	0	0.0	7,658	100.0
	8/12 - 13	71	M	89	1.4	3,305	52.1	89	1.4	0	0.0	3,484	54.9
	(8/02 - 9/19)		F	0	0.0	2,859	45.1	0	0.0	0	0.0	2,859	45.1
			Subtotal	89	1.4	6,164	97.2	89	1.4	0	0.0	6,343	100.0
	Season	597	M	89	0.3	15,124	44.9	1,629	4.8	104	0.3	16,947	50.3
			F	413	1.2	14,554	43.3	1,752	5.2	0	0.0	16,719	49.7
			Total	502	1.5	29,678	88.2	3,381	10.0	104	0.3	33,666	100.0
	Grand Total [e]	3,975	M	466	0.6	29,081	35.1	12,661	15.3	625	0.8	42,833	51.7
			F	885	1.1	28,982	35.0	10,081	12.2	92	0.1	40,046	48.3
			Total	1,351	1.6	58,063	70.1	22,742	27.4	717	0.9	82,879	100.0

[a] The number of fish in each stratum age and sex category are derived from the sample percentages; discrepancies in sums are attributed to rounding errors.

[b] The number of fish in "Season" summaries are the strata sums; "Season" percentages are derived from the sums.

[c] The weir washed out in 1998, ASL composition of escapement was not determined.

[d] Sampling dates do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[e] The number of fish in the "Grand Total" are the sum of the "Season" totals; percentages are derived from those sums.

Table 10. Mean length (mm) of chum salmon at the George River weir based on escapement samples collected with a fish trap.[a]

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
1996	6/22 - 23	M	Mean Length		616	625	644
	(6/15 - 28)		Std. Error		25	6	37
			Range		553- 702	589- 675	573- 698
			Sample Size	0	5	16	3
		F	Mean Length	598	556	590	
			Std. Error	-	6	8	
			Range	598- 598	516- 589	544- 623	
			Sample Size	1	10	12	0
	7/5 - 6	M	Mean Length		601	616	613
	(6/29 - 7/8)		Std. Error		5	5	-
			Range		509- 703	526- 689	613- 613
			Sample Size	0	55	60	1
		F	Mean Length		553	562	
			Std. Error		5	8	
			Range		494- 619	459- 657	
			Sample Size	0	34	27	0
	7/11	M	Mean Length	595	608	609	577
	(7/9 - 13)		Std. Error	6	8	8	-
			Range	589- 601	521- 702	548- 656	577- 577
			Sample Size	2	28	15	1
		F	Mean Length	561	558	551	
			Std. Error	19	7	14	
			Range	537- 598	498- 639	443- 624	
			Sample Size	3	29	13	0
	7/16 - 17	M	Mean Length	580	596	611	
	(7/14 - 18)		Std. Error	-	5	6	
			Range	580- 580	442- 689	522- 679	
			Sample Size	1	67	35	0
		F	Mean Length	550	563	578	
			Std. Error	15	4	6	
			Range	500- 576	474- 635	499- 640	
			Sample Size	5	67	28	0
	7/20	M	Mean Length		590	595	
	(7/19 - 22)		Std. Error		6	21	
			Range		548- 653	548- 689	
			Sample Size	0	27	6	0
		F	Mean Length	598	556	590	
			Std. Error	-	6	8	
			Range	598- 598	516- 589	544- 623	
			Sample Size	1	10	12	0

-Continued-

Table 10. (page 2 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
1996 (cont.)	7/25 - 26 (7/23 - 9/10)	M	Mean Length		585	589	583
			Std. Error		4	10	41
			Range		522- 651	523- 678	542- 623
			Sample Size	0	69	15	2
		F	Mean Length		545	561	
			Std. Error		4	8	
			Range		483- 614	506- 641	
			Sample Size	0	74	18	0
	Season	M	Mean Length	592	595	614	626
			Range	580- 601	442- 703	522- 689	542- 698
			Sample size	3	251	147	7
		F	Mean Length	560	552	570	
			Range	496- 598	460- 639	443- 657	
			Sample size	12	238	107	0
1997	7/4, 7- 11 (6/15 - 7/12)	M	Mean Length		572	608	635
			Std. Error		9	7	14
			Range		465- 628	526- 678	620- 649
			Sample Size	0	21	30	2
		F	Mean Length		552	564	570
			Std. Error		7	6	-
			Range		505- 599	500- 625	570- 570
			Sample Size	0	15	24	1
	7/14 - 18 (7/13 - 19)	M	Mean Length		562	588	617
			Std. Error		4	4	22
			Range		508- 632	530- 667	595- 639
			Sample Size	0	58	59	2
		F	Mean Length		536	541	605
			Std. Error		4	5	-
			Range		458- 615	483- 602	605- 605
			Sample Size	0	42	28	1
	7/21 - 24 (7/20 - 25)	M	Mean Length		556	579	564
			Std. Error		4	6	-
			Range		515- 629	501- 667	564- 564
			Sample Size	0	47	45	1
		F	Mean Length		536	565	
			Std. Error		4	5	
			Range		479- 580	514- 619	
			Sample Size	0	37	33	0

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Table 10. (page 3 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
1997 (cont.)	7/27 - 31 (7/26 - 8/1)	M	Mean Length		559	570	
			Std. Error		4	6	
			Range		500- 640	519- 641	
			Sample Size	0	48	32	0
		F	Mean Length	506	535	547	563
			Std. Error	4	5	11	-
			Range	502- 509	477- 587	494- 595	563- 563
			Sample Size	2	32	10	1
	8/4 - 6 (8/2 - 7)	M	Mean Length		549	581	
			Std. Error		8	14	
			Range		521- 592	538- 613	
			Sample Size	0	9	5	0
		F	Mean Length		519	527	
			Std. Error		8	8	
			Range		478- 579	514- 540	
			Sample Size	0	13	3	0
	8/10 - 13 (8/8 - 9/10)	M	Mean Length	514	540	595	
			Std. Error	43	12	13	
			Range	471- 557	508- 578	582- 607	
			Sample Size	2	5	2	0
		F	Mean Length	503	516	514	
			Std. Error	22	8	8	
			Range	481- 524	372- 576	506- 522	
			Sample Size	2	25	2	0
	Season	M	Mean Length	514	561	591	621
			Range	471- 557	465- 640	501- 678	564- 649
			Sample Size	2	188	173	5
		F	Mean Length	504	535	558	576
			Range	481- 524	372- 615	483- 625	563- 605
			Sample Size	4	164	100	3
1998 [b]	6/30 - 7/1	M	Mean Length		581	607	
			Std. Error		3	9	
			Range		511- 643	540- 706	
			Sample Size	0	78	18	0
		F	Mean Length		555	564	
			Std. Error		3	8	
			Range		508- 608	503- 624	
			Sample Size	0	56	14	0

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Table 10. (page 4 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
1998 [b] (cont.)	7/5 - 6	M	Mean Length		587	616	
			Std. Error		3	7	
			Range		513- 669	555- 654	
			Sample Size	0	89	15	0
		F	Mean Length		557	573	560
			Std. Error		4	11	-
			Range		510- 614	515- 620	560- 560
			Sample Size	0	43	8	1
1999 [c]	7/17 - 19 (7/15 - 20)	M	Mean Length		573	593	
			Std. Error		3	4	
			Range		510- 630	525- 660	
			Sample Size	0	58	58	0
		F	Mean Length		547	559	
			Std. Error		3	6	
			Range		495- 600	515- 595	
			Sample Size	0	56	22	0
	7/23 - 24 (7/21 - 28)	M	Mean Length		580	596	590
			Std. Error		4	5	10
			Range		500- 650	525- 655	580- 600
			Sample Size	0	62	34	2
		F	Mean Length		552	563	
			Std. Error		3	6	
			Range		480- 605	495- 665	
			Sample Size	0	68	32	0
	8/2 - 3 (7/29 - 8/6)	M	Mean Length		572	575	575
			Std. Error		3	6	-
			Range		505- 650	505- 630	575- 575
			Sample Size	0	63	29	1
		F	Mean Length		536	553	
			Std. Error		3	6	
			Range		480- 595	490- 605	
			Sample Size	0	73	27	0
	8/9 (8/7 - 9/20)	M	Mean Length		554	581	
			Std. Error		17	13	
			Range		485- 600	540- 625	
			Sample Size	0	6	6	0
		F	Mean Length		539	507	
			Std. Error		10	7	
			Range		500- 570	480- 530	
			Sample Size	0	7	7	0

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Table 10. (page 5 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
2000	7/4, 6	M	Mean Length		579	608	605
	(6/15-7/7)		Std. Error		5	6	-
			Range		545- 610	545- 660	605- 605
			Sample Size	0	16	29	1
		F	Mean Length		576	587	580
			Std. Error		11	11	-
			Range		520- 665	555- 635	580- 580
			Sample Size	0	11	9	1
	7/10, 12	M	Mean Length	570	576	604	520
	(7/8 - 16)		Std. Error	-	5	6	-
			Range	570- 570	545- 610	565- 645	520- 520
			Sample Size	1	13	15	1
		F	Mean Length		552	572	
			Std. Error		7	5	
			Range		490- 580	545- 600	
			Sample Size	0	13	14	0
	7/21, 24, 25	M	Mean Length		575	600	
	(7/17 - 26)		Std. Error		6	8	
			Range		520- 640	520- 675	
			Sample Size	0	21	27	0
		F	Mean Length		555	561	
			Std. Error		6	6	
			Range		495- 615	500- 585	
			Sample Size	0	22	16	0
	7/28	M	Mean Length	570	598	575	
	(7/27- 9/5)		Std. Error	-	20	-	
			Range	570- 570	540- 645	575- 575	
			Sample Size	1	5	1	0
		F	Mean Length	555	546	565	
			Std. Error	-	7	12	
			Range	555- 555	510- 575	530- 610	
			Sample Size	1	11	6	0
	Season	M	Mean Length	570	579	605	562
			Range	570- 570	520- 645	520- 675	520- 605
			Sample Size	2	55	72	2
		F	Mean Length	555	558	572	580
			Range	555- 555	490- 665	500- 635	580- 580
			Sample Size	1	57	45	1

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Table 10. (page 6 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
2001	6/30, 7/1	M	Mean Length		566	590	
	(6/15-7/4)		Std. Error		15	10	
			Range		508- 600	555- 658	
			Sample Size	0	6	11	0
		F	Mean Length			549	
			Std. Error			12	
			Range			494- 602	
			Sample Size	0	0	8	0
	7/9 , 10, 11, 13, 14	M	Mean Length		573	592	
	(7/5 - 15)		Std. Error		4	4	
			Range		521- 645	518- 681	
			Sample Size	0	49	58	0
		F	Mean Length		543	556	
			Std. Error		5	4	
			Range		461- 606	491- 631	
			Sample Size	0	48	45	0
	7/17 - 19	M	Mean Length		568	582	
	(7/16 - 21)		Std. Error		4	7	
			Range		491- 678	523- 623	
			Sample Size	0	62	14	0
		F	Mean Length		545	564	
			Std. Error		4	6	
			Range		320- 670	493- 625	
			Sample Size	0	95	30	0
	7/24, 25, 27	M	Mean Length		556	578	
	(7/22 - 29)		Std. Error		3	11	
			Range		497- 621	518- 657	
			Sample Size	0	80	13	0
		F	Mean Length		527	546	
			Std. Error		3	7	
			Range		422- 582	487- 618	
			Sample Size	0	88	20	0
	7/31, 8/2, 3, 5, 10	M	Mean Length		565	571	
	(7/30-9/19)		Std. Error		5	9	
			Range		455- 635	523- 635	
			Sample Size	0	45	10	0
		F	Mean Length		535	541	
			Std. Error		3	12	
			Range		470- 597	494- 640	
			Sample Size	0	89	11	0

-Continued-

Table 10. (page 7 of 9)

Year	Sample Dates (Stratum Dates)	Sex		0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
				Age Class			
2001 (cont.)	Season	M	Mean Length		566	588	
			Range		455- 678	518- 681	
			Sample Size	0	242	106	0
		F	Mean Length		538	555	
			Range		320- 670	487- 640	
			Sample Size	0	320	114	0
2002	6/24 - 27 (6/15 - 29)	M	Mean Length		592	603	639
			Std. Error		5	3	15
			Range		528- 639	518- 682	616- 667
			Sample Size	0	39	83	3
		F	Mean Length		555	586	586
			Std. Error		9	3	14
			Range		444- 607	547- 650	551- 645
			Sample Size	0	17	52	6
	7/1 - 4, 6 (6/30 - 7/8)	M	Mean Length	516	594	606	626
			Std. Error	19	4	4	1
			Range	497- 535	544- 679	553- 681	625- 627
			Sample Size	2	54	66	2
		F	Mean Length		560	578	
			Std. Error		4	3	
			Range		489- 613	533- 649	
			Sample Size	0	44	50	0
	7/10 - 13 (7/9 - 15)	M	Mean Length	548	579	600	578
			Std. Error	10	4	5	-
			Range	515- 575	519- 655	528- 665	578- 578
			Sample Size	5	50	44	1
		F	Mean Length	484	545	563	548
			Std. Error	-	4	5	-
			Range	484- 484	474- 601	465- 623	548- 548
			Sample Size	1	50	41	1
	7/17 - 19 (7/16 - 21)	M	Mean Length	534	573	592	562
			Std. Error	7	6	7	-
			Range	436- 577	474- 677	507- 658	562- 562
			Sample Size	20	39	29	1
		F	Mean Length	511	537	562	
			Std. Error	9	4	5	
			Range	476- 557	435- 612	503- 631	
			Sample Size	10	62	30	0

-Continued-

Table 10. (page 8 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
2002 (cont.)	7/24 - 27 (7/22 - 28)	M	Mean Length	538	575	597	
			Std. Error	7	6	12	
			Range	506- 575	518- 625	522- 648	
			Sample Size	10	16	10	0
		F	Mean Length	510	532	535	
			Std. Error	8	6	9	
			Range	459- 541	480- 602	490- 592	
			Sample Size	11	29	12	0
	7/30 - 8/8 (7/29 - 9/20)	M	Mean Length	526	546	609	598
			Std. Error	9	10	21	-
			Range	465- 554	501- 609	559- 660	598- 598
			Sample Size	8	13	4	1
		F	Mean Length	517	526	553	
			Std. Error	9	5	9	
			Range	486- 537	490- 570	514- 605	
			Sample Size	5	23	11	0
	Season	M	Mean Length	534	582	602	612
			Range	436- 577	474- 679	507- 682	562- 667
			Sample Size	45	211	236	8
		F	Mean Length	510	544	570	577
			Range	459- 557	435- 613	465- 650	548- 645
			Sample Size	27	225	196	7
2003	7/11 - 13 (6/15 - 7/15)	M	Mean Length		568	575	600
			Std. Error		4	8	-
			Range		476- 654	508- 630	600- 600
			Sample Size	0	95	17	1
		F	Mean Length		541	548	
			Std. Error		3	7	
			Range		481- 600	494- 590	
			Sample Size	0	58	16	0
	7/18 - 20 (7/16 - 23)	M	Mean Length		560	587	530
			Std. Error		4	8	-
			Range		480- 640	569- 609	530- 530
			Sample Size	0	78	5	1
		F	Mean Length	507	527	547	
			Std. Error	11	3	9	
			Range	449- 554	476- 600	512- 603	
			Sample Size	8	86	11	0

-Continued-

Table 10. (page 9 of 9)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 0.2 (3)	0.3 (4)	0.4 (5)	0.5 (6)
	7/25 - 26	M	Mean Length		537	567	
	(7/24 - 8/01)		Std. Error		4	12	
			Range		480- 603	527- 605	
			Sample Size	0	52	6	0
2003		F	Mean Length	510	515	551	
(cont.)			Std. Error	-	3	19	
			Range	510- 510	454- 597	480- 620	
			Sample Size	1	84	6	0
	8/12 - 8/13	M	Mean Length	424	541	516	
	(8/2 - 9/19)		Std. Error	-	5	-	
			Range	424- 424	485- 598	516- 516	
			Sample Size	1	37	1	0
		F	Mean Length		503		
			Std. Error		4		
			Range		470- 561		
			Sample Size	0	32	0	0
	Season	M	Mean Length	424	555	572	570
			Range	424- 424	476- 654	508- 630	530- 600
			Sample Size	1	262	29	2
		F	Mean Length	507	522	548	
			Range	449 - 554	454- 600	480- 620	
			Sample Size	9	260	33	0
	Grand Total [d]	M	Mean Length	509	571	592	581
			Range	471- 601	465 - 703	501 - 689	542 - 698
			Sample size	48	770	443	12
		F	Mean Length	524	541	561	579
			Range	481- 614	372- 639	433 - 657	563 - 605
			Sample size	37	862	388	8

[a] "Season" mean lengths are weighted by the escapement passage in each stratum.

[b] The weir washed out in 1998, ASL composition of escapement was not determined.

[c] Sampling dates do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[e] The number of fish in the "Grand total" are the sum of the "Season" totals; percentages are derived from those sums.

Table 11. Age and sex of coho salmon at the George River weir based on escapement samples collected with a fish trap. [ab]

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 1.1 (3) Esc.	1.1 (3) %	2.1 (4) Esc.	2.1 (4) %	3.1 (5) Esc.	3.1 (5) %	Total Esc.	Total %
1996	The weir was not operational through coho season in 1996.										
1997	8/4- 7, 10- 12 (7/20 - 8/16)	60	M	0	0.0	722	56.7	21	1.7	743	58.3
			F	0	0.0	531	41.6	0	0.0	531	41.7
			Subtotal	0	0.0	1,253	98.3	21	1.7	1,274	100.0
	8/20 - 26 (8/17 - 28)	71	M	0	0.0	1,829	64.8	40	1.4	1,868	66.2
			F	0	0.0	914	32.4	39	1.4	954	33.8
			Subtotal	0	0.0	2,743	97.2	79	2.8	2,822	100.0
	8/30- 31, 9/3- 4 (8/29 - 9/20)	73	M	210	4.1	2,522	49.3	0	0.0	2,732	53.4
			F	0	0.0	2,312	45.2	70	1.4	2,382	46.6
			Subtotal	210	4.1	4,834	94.5	70	1.4	5,114	100.0
	Season	204	M	210	2.3	5,072	55.1	61	0.7	5,343	58.0
			F	0	0.0	3,757	40.8	110	1.2	3,867	42.0
			Total	210	2.3	8,829	95.9	171	1.9	9,210	100.0
1998	The weir was not operational through coho season in 1998.										
1999	8/28- 31 (7/28 - 8/31)	107	M	108	4.7	978	42.0	195	8.4	1,283	55.1
			F	22	0.9	674	29.0	348	15.0	1,043	44.9
			Subtotal	130	5.6	1,652	71.0	543	23.4	2,326	100.0
	9/2- 4 (9/1 - 9/6)	99	M	50	2.0	1,057	42.4	554	22.2	1,661	66.7
			F	0	0.0	630	25.3	201	8.1	831	33.3
			Subtotal	50	2.0	1,687	67.7	755	30.3	2,492	100.0
	9/10, 12- 13 (9/7 - 9/20)	132	M	0	0.0	1,645	40.2	683	16.7	2,327	56.8
			F	62	1.5	1,241	30.3	465	11.3	1,769	43.2
			Subtotal	62	1.5	2,886	70.5	1,148	28.0	4,096	100.0
	Season	338	M	159	1.8	3,680	41.3	1,432	16.0	5,271	59.1
			F	84	0.9	2,544	28.5	1,015	11.4	3,643	40.9
			Total	243	2.7	6,224	69.8	2,447	27.4	8,914	100.0
2000	8/13-15 (7/22 - 8/18)	150	M	0	0.0	1,931	59.3	22	0.7	1,953	60.0
			F	43	1.3	1,237	38.0	21	0.6	1,302	40.0
			Subtotal	43	1.3	3,168	97.3	43	1.3	3,255	100.0
	8/21-22, 24 (8/19 - 26)	116	M	107	2.6	2,493	60.3	0	0.0	2,600	62.9
			F	0	0.0	1,531	37.1	0	0.0	1,531	37.1
			Subtotal	107	2.6	4,024	97.4	0	0.0	4,131	100.0
	8/29 - 30 (8/27 - 9/20)	99	M	0	0.0	1,762	45.5	78	2.0	1,840	47.5
			F	0	0.0	2,036	52.5	0	0.0	2,036	52.5
			Subtotal	0	0.0	3,798	98.0	78	2.0	3,876	100.0
	Season	365	M	107	0.9	6,186	54.9	100	0.9	6,393	56.8
			F	43	0.4	4,804	42.7	22	0.2	4,869	43.2
			Total	150	1.3	10,990	97.6	122	1.1	11,262	100.0
2001	8/9, 28-30 (7/27 - 9/1)	148	M	85	0.7	3,999	31.7	1,872	14.9	5,956	47.3
			F	0	0.0	4,254	33.8	2,382	18.9	6,636	52.7
			Subtotal	85	0.7	8,253	65.5	4,254	33.8	12,592	100.0

-Continued-

Table 11. (page 2 of 2)

Year	Sample Dates (Stratum Dates)	Sample Size	Sex	Age Class 1.1 (3) Esc.	%	2.1 (4) Esc.	%	3.1 (5) Esc.	%	Total Esc.	%
2001	9/4-7	135	M	7	0.7	298	30.4	145	14.8	451	45.9
(cont.)	(9/2 - 9)		F	0	0.0	320	32.6	211	21.5	531	54.1
			Subtotal	7	0.7	618	63.0	356	36.3	982	100.0
	9/12-15	88	M	19	2.3	215	26.1	84	10.2	318	38.6
	(9/10 - 20)		F	0	0.0	356	43.2	150	18.2	506	61.4
			Subtotal	19	2.3	571	69.3	234	28.4	824	100.0
	Season	371	M	111	0.8	4,512	31.4	2,102	14.6	6,725	46.7
			F	0	0.0	4,930	34.2	2,743	19.0	7,673	53.3
			Total	111	0.8	9,442	65.6	4,845	33.6	14,398	100.0
2002 [c]	8/6 - 8	11	M		0.0		72.7		9.1		81.8
	(6/15 - 8/16)		F		0.0		18.2		0.0		18.2
			Subtotal		0.0		90.9		9.1		100.0
	8/23 - 26	55	M		0.0		61.8		9.1		70.9
	(8/17 - 30)		F		0.0		27.3		1.8		29.1
			Subtotal		0.0		89.1		10.9		100.0
	9/3	6	M		0.0		66.7		0.0		66.7
	(8/31 - 9/20)		F		0.0		33.3		0.0		33.3
			Subtotal		0.0		100.0		0.0		100.0
	Season	72	M								
			F								
			Subtotal							6,759	
2003	8/12 - 13	50	M	105	2.0	2,740	52.0	211	4.0	3,056	58.0
	(7/18 - 8/19)		F	211	4.0	1,791	34.0	211	4.0	2,213	42.0
			Subtotal	316	6.0	4,531	86.0	422	8.0	5,269	100.0
	8/26	58	M	0	0.0	6,927	43.1	831	5.2	7,757	48.3
	(8/20 - 31)		F	0	0.0	6,649	41.4	1,662	10.3	8,312	51.7
			Subtotal	0	0.0	13,576	84.5	2,493	15.5	16,069	100.0
	9/6 - 7	63	M	0	0.0	4,550	38.1	379	3.2	4,929	41.3
	(9/01 - 9/20)		F	0	0.0	6,635	55.6	379	3.1	7,014	58.7
			Subtotal	0	0.0	11,185	93.7	758	6.3	11,943	100.0
	Season	171	M	105	0.3	14,216	42.7	1,421	4.3	15,742	47.3
			F	211	0.6	15,076	45.3	2,252	6.7	17,539	52.7
			Subtotal	316	0.9	29,292	88.0	3,673	11.0	33,281	100.0
	Grand Total [d]	1279	M	573	1.3	19,293	44.3	3,700	8.5	23,566	54.1
			F	127	0.3	15,959	36.7	3,890	8.9	19,976	45.9
			Total	700	1.6	35,252	100.0	7,590	17.4	43,542	100.0

[a] The number of fish in each stratum age and sex category are derived from the sample percentages; discrepancies in sums are attributed to rounding errors.

[b] The number of fish in "Season" summaries are the strata sums; "Season" percentages are derived from the sums.

[c] Sample sizes do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[d] The number of fish in the "Grand Total" are the sum of the "Season" totals; percentages are derived from those sums.

Table 12. Mean length (mm) of coho salmon at the George River weir based on escapement samples collected with a fish trap. [a]

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
1996	The weir was not operational through coho season in 1996					
1997	8/4- 7, 10- 12 (7/20 - 8/16)	M	Mean Length		528	534
			Std. Error		9	-
			Range		383- 615	534- 534
			Sample Size	0	34	1
		F	Mean Length		541	
			Std. Error		9	
			Range		456- 632	
			Sample Size	0	25	0
	8/20 - 26 (8/17 - 28)	M	Mean Length		554	587
			Std. Error		6	-
			Range		456- 651	587- 587
			Sample Size	0	46	1
		F	Mean Length		562	558
			Std. Error		7	-
			Range		483- 631	558- 558
			Sample Size	0	23	1
	8/30- 31, 9/3- 4 (8/29 - 9/15)	M	Mean Length	569	556	
			Std. Error	19	9	
			Range	541- 606	425- 653	
			Sample Size	3	36	0
		F	Mean Length		571	595
			Std. Error		5	-
			Range		527- 651	595- 595
			Sample Size	0	34	1
	Season	M	Mean Length	569	551	569
			Range	541- 606	383- 653	534- 587
			Sample Size	3	116	2
		F	Mean Length		564	581
			Range		456- 651	558- 595
			Sample size	0	82	2
1998	The weir was not operational through coho season in 1998.					

-Continued-

Table 12. (page 2 of 6)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
1999	8/28- 31	M	Mean Length	497	528	518
	(7/28 - 8/31)		Std. Error	6	7	15
			Range	480- 510	405- 605	450- 585
			Sample Size	5	45	9
		F	Mean Length	595	547	547
			Std. Error	-	5	7
			Range	595- 595	495- 580	495- 590
			Sample Size	1	31	16
	9/2- 4	M	Mean Length	495	546	568
	(9/1 - 9/6)		Std. Error	5	7	9
			Range	490- 500	415- 620	500- 645
			Sample Size	2	42	22
		F	Mean Length		549	554
			Std. Error		8	3
			Range		445- 600	545- 575
			Sample Size	0	25	8
	9/10, 12- 13	M	Mean Length		559	573
	(9/7 - 9/24)		Std. Error		5	9
			Range		460- 620	485- 640
			Sample Size	0	53	22
		F	Mean Length	518	535	553
			Std. Error	28	6	10
			Range	490- 545	445- 600	475- 635
			Sample Size	2	40	15
	Season	M	Mean Length	496	547	564
			Range	480- 510	405- 620	450- 645
			Sample Size	7	140	53
		F	Mean Length	538	541	551
			Range	490- 595	445- 600	475- 635
			Sample Size	3	96	39
2000	8/13 - 15	M	Mean Length		533	565
	(7/22 - 8/18)		Std. Error		5	-
			Range		415- 625	565- 565
			Sample Size	0	89	1
		F	Mean Length	558	552	540
			Std. Error	18	4	-
			Range	540- 575	485- 620	540- 540
			Sample Size	2	57	1

-Continued-

Table 12. (page 3 of 6)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
2000	8/21- 22, 24	M	Mean Length	497	540	
(cont.)	(8/19 - 26)		Std. Error	26	5	
			Range	445- 530	445- 655	
			Sample Size	3	70	0
		F	Mean Length		547	
			Std. Error		5	
			Range		470- 620	
			Sample Size	0	43	0
	8/29 - 30	M	Mean Length		562	630
	(8/27 - 9/16)		Std. Error		5	45
			Range		485- 635	585- 675
			Sample Size	0	45	2
		F	Mean Length		557	
			Std. Error		4	
			Range		470- 625	
			Sample Size	0	52	0
	Season	M	Mean Length	497	544	616
			Range	445- 530	415- 655	565- 675
			Sample Size	3	204	3
		F	Mean Length	558	552	540
			Range	540- 575	470- 625	540- 540
			Sample Size	2	152	1
2001	8/9, 28-30	M	Mean Length	476	566	549
	(7/27 - 9/1)		Std. Error	-	8	12
			Range	476- 476	408- 637	385- 629
			Sample Size	1	47	22
		F	Mean Length		552	553
			Std. Error		5	6
			Range		426- 625	476- 608
			Sample Size	0	50	28
	9/4-7	M	Mean Length	562	560	579
	(9/2 - 9)		Std. Error	-	7	13
			Range	562- 562	457- 635	426- 659
			Sample Size	1	41	20
		F	Mean Length		553	565
			Std. Error		6	5
			Range		449- 632	528- 620
			Sample Size	0	44	29

-Continued-

Table 12. (page 4 of 6)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
2001 (cont.)	9/12-15 (9/10 - 22)	M	Mean Length	593	573	603
			Std. Error	5	11	13
			Range	588- 597	474- 665	558- 671
			Sample Size	2	23	9
		F	Mean Length		555	580
			Std. Error		7	11
			Range		378- 610	439- 626
			Sample Size	0	38	16
	Season	M	Mean Length	502	566	553
			Range	476- 597	408- 665	385- 671
			Sample Size	4	111	51
		F	Mean Length		552	556
			Range		378- 632	439- 626
			Sample Size	0	132	73
2002 [b]	8/6 - 8 (6/15 - 8/16)	M	Mean Length		531	491
			Std. Error		13	-
			Range		482- 593	491- 491
			Sample Size	0	8	1
		F	Mean Length		542	
			Std. Error		46	
			Range		496- 587	
			Sample Size	0	2	0
	8/23 - 26 (8/17 - 30)	M	Mean Length		529	562
			Std. Error		10	15
			Range		418- 653	523- 606
			Sample Size	0	34	5
		F	Mean Length		563	534
			Std. Error		8	-
			Range		487- 604	534- 534
			Sample Size	0	15	1
	9/3 (8/31 - 9/20)	M	Mean Length		591	
			Std. Error		18	
			Range		569- 645	
			Sample Size	0	4	0
		F	Mean Length		564	
			Std. Error		26	
			Range		537- 590	
			Sample Size	0	2	0

-Continued-

Table 12. (page 5 of 6)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
2002 [b] (cont.)	Season	M	Mean Length		576	536
			Range		418- 653	491- 606
			Sample Size	0	46	6
		F	Mean Length		562	534
			Range		487- 604	534- 534
			Sample Size	0	19	1
2003	8/12 - 13 (7/18 - 8/19)	M	Mean Length	578	544	536
			Std. Error	-	10	21
			Range	578- 578	429- 620	515- 556
			Sample Size	1	26	2
		F	Mean Length	454	529	558
			Std. Error	46	14	18
			Range	408- 500	410- 593	540- 576
			Sample Size	2	17	2
	8/26 (8/20 - 31)	M	Mean Length		566	547
			Std. Error		8	31
			Range		497- 673	486- 580
			Sample Size	0	25	3
		F	Mean Length		574	572
			Std. Error		8	9
			Range		458- 633	542- 601
			Sample Size	0	24	6
	9/6 - 7 (9/01 - 9/20)	M	Mean Length		543	576
			Std. Error		10	28
			Range		428- 617	548- 604
			Sample Size	0	24	2
		F	Mean Length		554	556
			Std. Error		6	11
			Range		440- 605	545- 567
			Sample Size	0	35	2
	Season	M	Mean Length	578	554	553
			Range	578- 578	428- 673	486- 604
			Sample Size	1	75	7
		F	Mean Length	454	560	568
			Range	408- 500	410-633	540- 601
			Sample Size	2	76	10

-Continued-

Table 12. (page 6 of 6)

Year	Sample Dates (Stratum Dates)	Sex		Age Class 1.1 (3)	2.1 (4)	3.1 (5)
	Grand Total [c]	M	Mean Length	516	552	576
			Range	480-606	383-653	450-645
			Sample Size	17	571	109
		F	Mean Length	548	552	557
			Range	490-595	445-651	475-635
			Sample Size	5	462	115

[a] "Season" mean lengths are weighted by the escapement passage in each stratum.

[b] Sample sizes do not meet criteria for estimating escapement percentages for some or all of the strata. "Season" is not included in "Grand Total".

[c] "Grand Total" mean lengths are simple averages of the "Season" mean lengths.

Table 13. Daily, cumulative and percentage of chum and coho salmon tags recoverd and observed at the George River weir, and recovered tags by date tagged at Kalskag-Aniak, 2003.

	Daily Tags						Percent Tags					
	Chum			Coho			Chum			Coho		
Date	Recovered	Observed	Tagged	Recovered	Observed	Tagged	Recovered	Observed	Tagged	Recovered	Observed	Tagged
6/15	0	0	0	0	0	0	0	0	0	0	0	0
6/16	0	0	0	0	0	0	0	0	0	0	0	0
6/17	0	0	0	0	0	0	0	0	0	0	0	0
6/18	0	0	0	0	0	0	0	0	0	0	0	0
6/19	0	0	0	0	0	0	0	0	0	0	0	0
6/20	0	0	2	0	0	0	0	0	1	0	0	0
6/21	0	0	0	0	0	0	0	0	1	0	0	0
6/22	0	0	0	0	0	0	0	0	1	0	0	0
6/23	0	0	0	0	0	0	0	0	1	0	0	0
6/24	0	0	0	0	0	0	0	0	1	0	0	0
6/25	0	0	0	0	0	0	0	0	1	0	0	0
6/26	0	0	0	0	0	0	0	0	1	0	0	0
6/27	0	0	0	0	0	0	0	0	1	0	0	0
6/28	0	0	0	0	0	0	0	0	1	0	0	0
6/29	0	0	2	0	0	0	0	0	2	0	0	0
6/30	0	0	0	0	0	0	0	0	2	0	0	0
7/1	0	1	0	0	0	0	0	0	2	0	0	0
7/2	0	0	2	0	0	0	0	0	3	0	0	0
7/3	0	0	4	0	0	0	0	0	5	0	0	0
7/4	0	0	10	0	0	0	0	0	9	0	0	0
7/5	0	0	7	0	0	0	0	0	12	0	0	0
7/6	0	0	10	0	0	0	0	0	17	0	0	0
7/7	0	0	13	0	0	0	0	0	23	0	0	0
7/8	0	11	11	0	0	0	0	3	28	0	0	0
7/9	1	14	7	0	0	0	0	7	31	0	0	0
7/10	1	9	7	0	0	0	1	10	34	0	0	0
7/11	2	3	6	0	0	0	2	11	37	0	0	0
7/12	9	11	10	0	0	0	6	14	42	0	0	0
7/13	12	13	9	0	0	0	11	17	46	0	0	0
7/14	18	21	12	0	0	0	19	23	51	0	0	0
7/15	15	16	10	0	0	0	26	28	56	0	0	0
7/16	3	3	25	0	0	0	28	29	67	0	0	0
7/17	2	4	20	0	0	0	29	30	76	0	0	0
7/18	8	9	12	0	0	0	32	32	82	0	0	0
7/19	13	20	13	0	0	0	38	38	88	0	0	0
7/20	17	21	3	0	0	0	46	44	89	0	0	0
7/21	17	18	5	0	0	0	53	49	91	0	0	0
7/22	22	25	0	0	0	0	63	56	91	0	0	0
7/23	23	25	0	0	0	0	74	63	91	0	0	0
7/24	6	12	1	0	0	0	76	66	92	0	0	0
7/25	16	17	0	0	0	0	84	71	92	0	0	0
7/26	9	13	1	0	0	0	88	75	92	0	0	0
7/27	7	10	0	0	0	0	91	78	92	0	0	0
7/28	0	0	0	0	0	0	91	78	92	0	0	1
7/29	0	0	0	0	0	0	91	78	92	0	0	1
7/30	0	0	1	0	0	0	91	78	93	0	0	1
7/31	0	0	1	0	0	0	91	78	93	0	0	1
8/1	0	0	0	0	0	1	91	78	93	0	0	1
8/2	0	0	0	0	0	0	91	78	93	0	0	1
8/3	0	0	2	0	0	0	91	78	94	0	0	2
8/4	0	3	3	0	0	1	91	79	95	0	0	2
8/5	0	16	3	0	0	0	91	83	97	0	0	2
8/6	1	12	1	0	0	0	91	86	97	0	0	2
8/7	0	6	1	0	0	0	91	88	98	0	0	2
8/8	0	4	0	0	0	1	91	89	98	0	0	2
8/9	0	2	0	0	0	0	91	90	98	0	0	4
8/10	3	6	0	3	3	1	93	92	98	1	1	9
8/11	8	9	0	0	0	3	96	94	98	1	1	13
8/12	1	2	0	0	0	3	97	95	98	1	1	16
8/13	1	2	0	0	0	2	97	95	98	1	1	18
8/14	0	1	0	0	6	4	97	95	98	1	2	21
8/15	0	0	0	0	0	1	97	95	98	1	2	27
8/16	0	0	0	0	0	2	97	95	98	1	2	34
8/17	0	0	0	0	0	2	97	95	98	1	2	38
8/18	0	0	1	0	0	2	97	95	98	1	2	41
8/19	0	3	0	0	0	1	97	96	98	1	2	44
8/20	0	3	0	0	1	1	97	97	98	1	2	46
8/21	0	0	0	0	26	4	97	97	98	1	9	53
8/22	0	4	0	0	10	5	97	98	98	1	11	58

-Continued-

Table 13. (page 2 of 2)

	Daily Tags						Percent Tags					
	Chum			Coho			Chum			Coho		
Date	Recovered	Observed	Tagged	Recovered	Observed	Tagged	Recovered	Observed	Tagged	Recovered	Observed	Tagged
8/23	0	0	0	0	8	2	97	98	98	1	13	60
8/24	0	0	0	0	2	6	97	98	98	1	13	64
8/25	1	1	0	13	16	4	98	99	98	8	17	71
8/26	0	0	0	16	19	1	98	99	98	15	22	78
8/27	0	0	1	20	20	3	98	99	99	25	27	81
8/28	0	0	2	13	16	2	98	99	100	31	31	87
8/29	0	0	1	2	2	2	98	99	100	32	31	88
8/30	0	0	0	3	2	1	98	99	100	33	32	91
8/31	0	0	0	26	26	1	98	99	100	45	38	92
9/1	1	1	0	0	101	0	98	99	100	45	62	95
9/2	0	0	0	0	31	3	98	99	100	45	70	96
9/3	0	0	0	6	7	0	98	99	100	48	71	99
9/4	3	3	0	4	4	2	100	100	100	50	72	100
9/5	1	1	0	7	7	0	100	100	100	53	74	100
9/6	0	0	0	13	15	0	100	100	100	59	78	100
9/7	0	0	0	12	12	0	100	100	100	65	80	100
9/8	0	0	0	10	11	0	100	100	100	70	83	100
9/9	0	0	0	7	7	0	100	100	100	73	85	100
9/10	0	0	0	9	9	0	100	100	100	77	87	100
9/11	0	0	0	6	7	0	100	100	100	80	89	100
9/12	0	0	0	0	1	0	100	100	100	80	89	100
9/13	0	0	0	36	40	0	100	100	100	97	99	100
9/14	0	0	0	6	6	0	100	100	100	100	100	100
9/15	0	0	0	0	0	0	100	100	100	100	100	100
9/16	0	0	0	0	0	0	100	100	100	100	100	100
9/17	0	0	0	0	0	0	100	100	100	100	100	100
9/18	0	0	0	0	0	0	100	100	100	100	100	100
9/19	0	0	0	0	0	0	100	100	100	100	100	100
9/20	0	0	0	0	0	0	100	100	100	100	100	100
TOTAL	220	355	220	211	413	211						

FIGURES

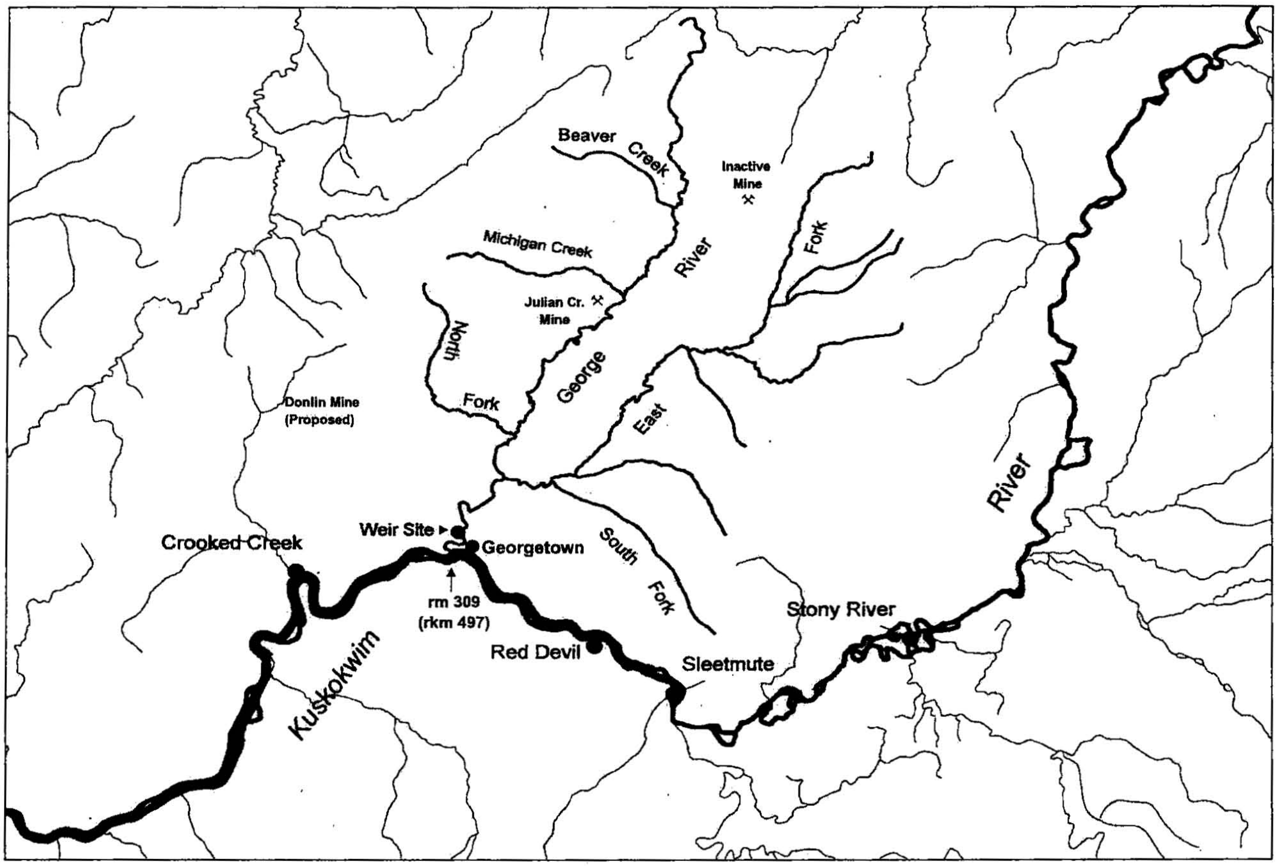


Figure 1. George River, middle Kuskokwim River basin.

Figure 2. Kuskokwim Area salmon management districts and escapement monitoring projects.

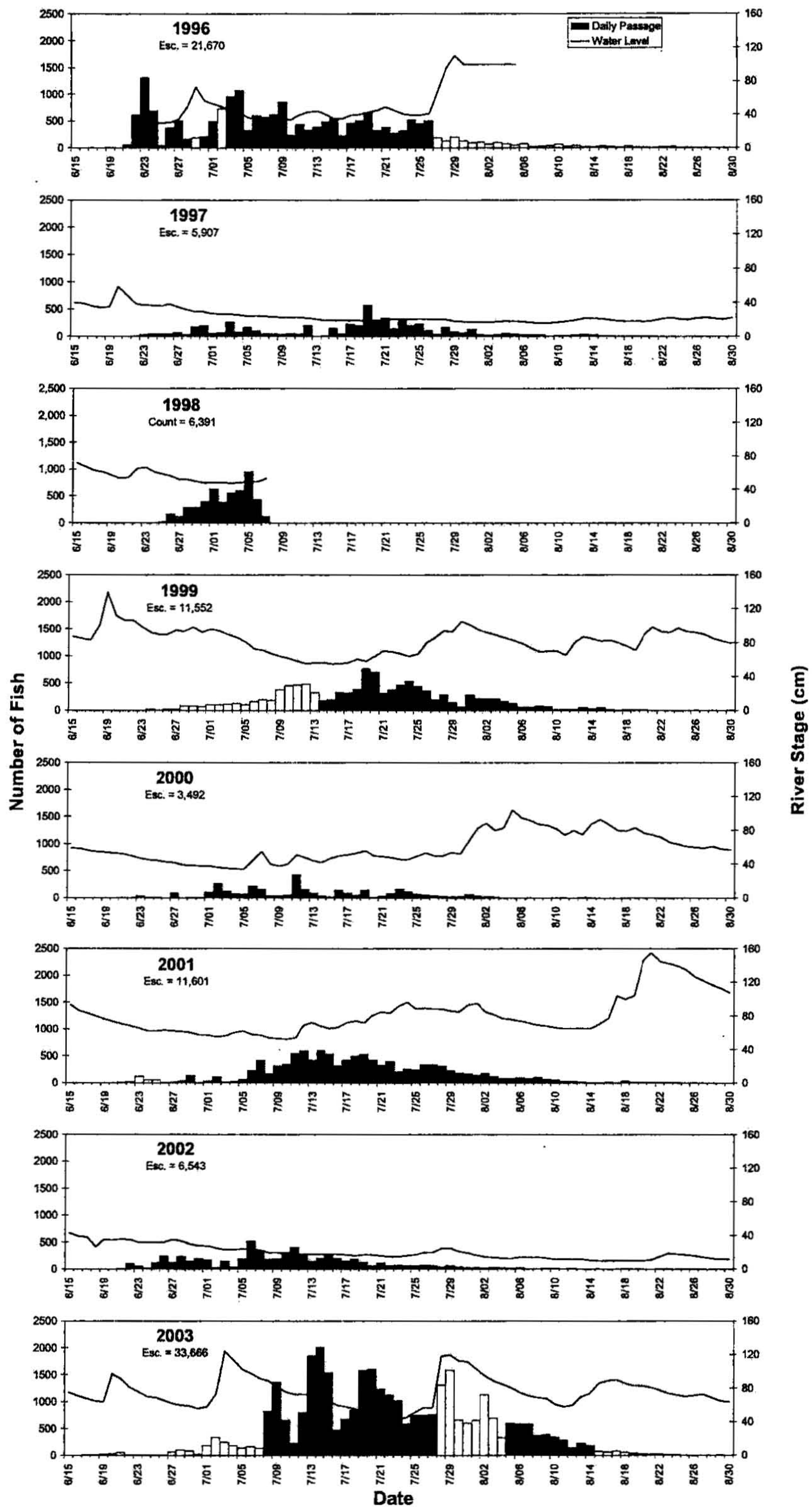


Figure 3. Daily chum salmon passage relative to daily river stage at the George River weir, 1996 through 2003. Solid bars represent observed passage, open bars represent estimated passage.

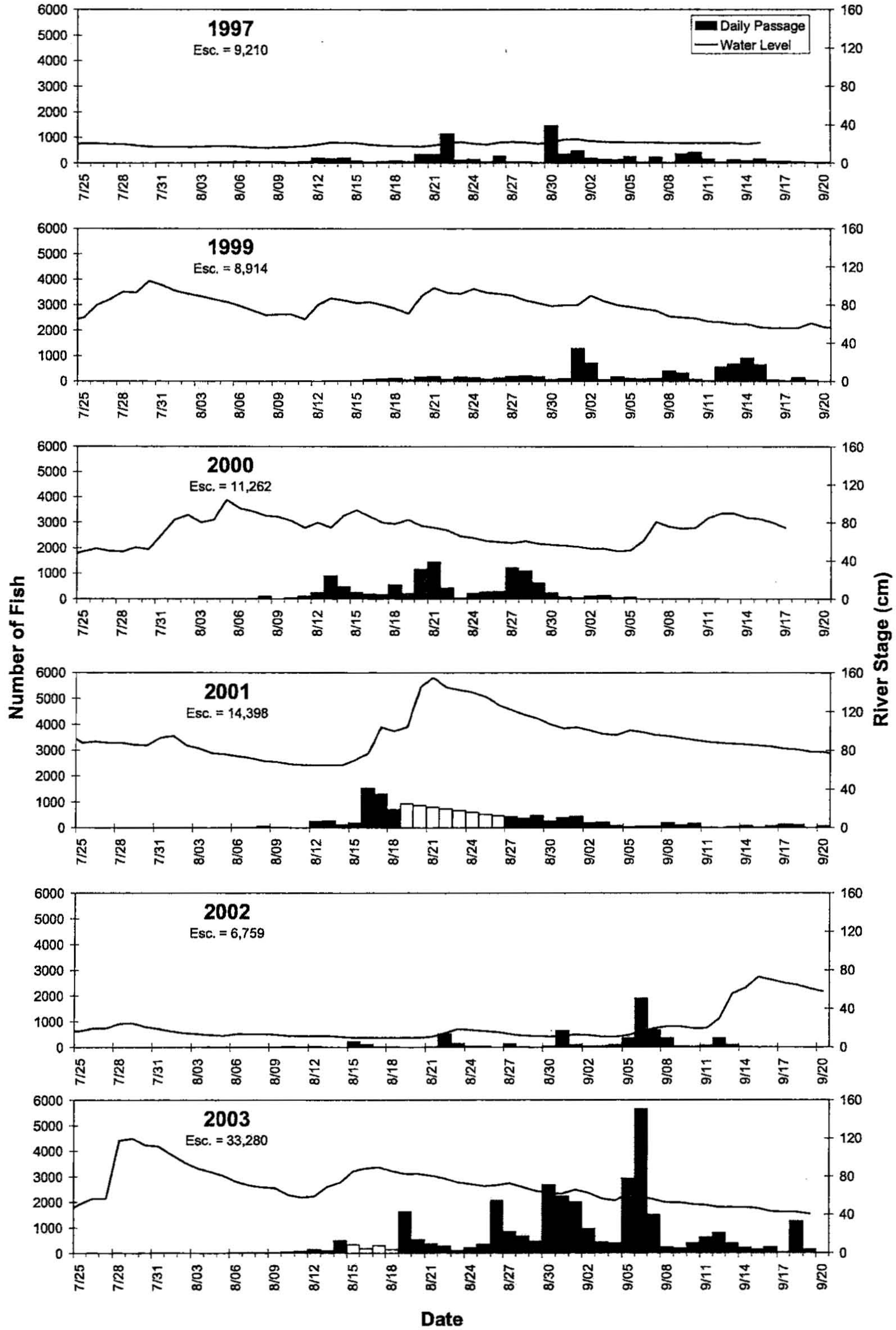


Figure 4. Daily coho salmon passage relative to daily river stage at the George River weir, 1997 through 2003. Solid bars represent observed passage, open bars represent estimated passage.

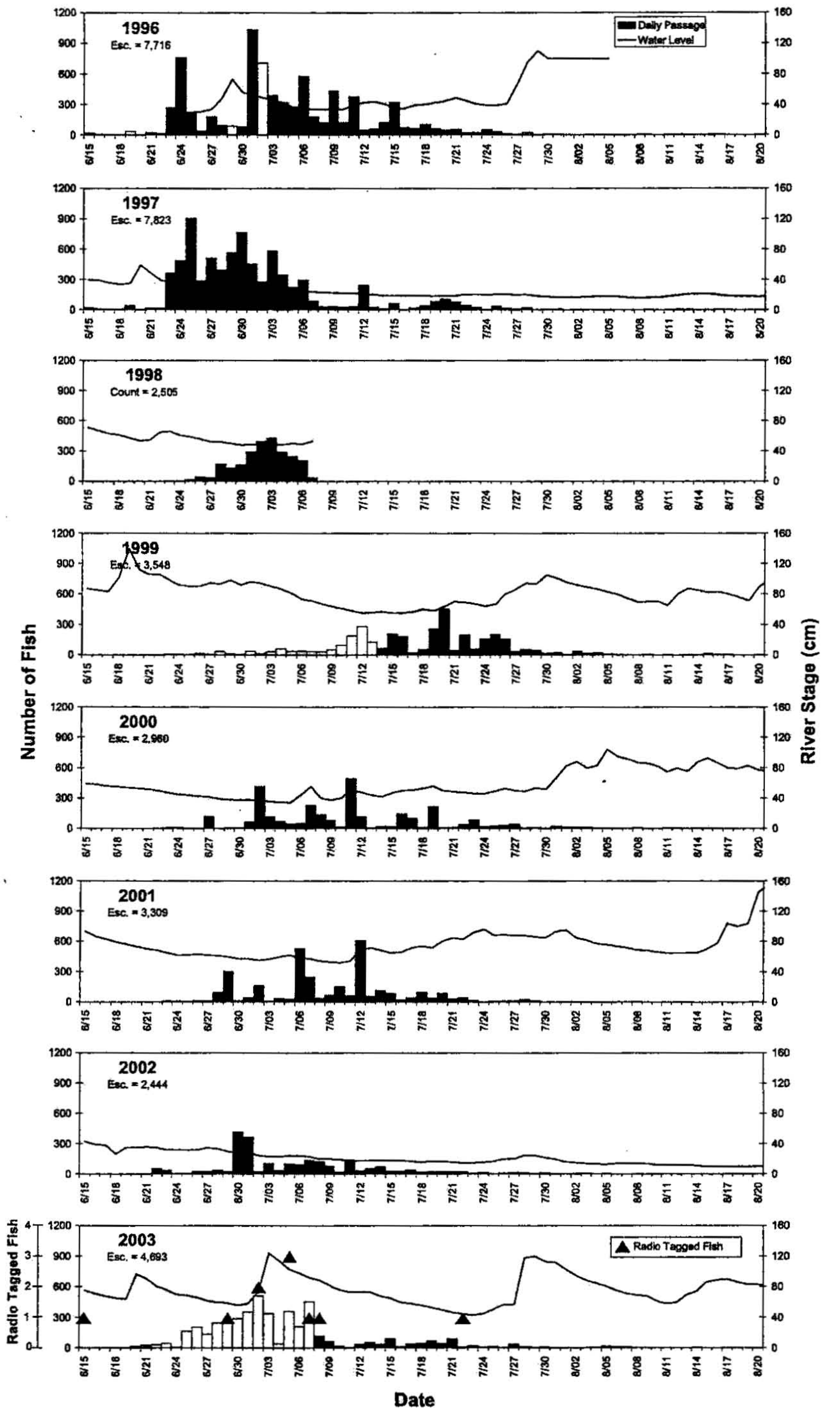


Figure 5. Daily chinook salmon passage relative to daily river stage at George River Weir, 1996 through 2003; and daily radio tagged chinook salmon passage at George River weir, 2003. Solid bars represent observed passage, open bars represent estimated passage.

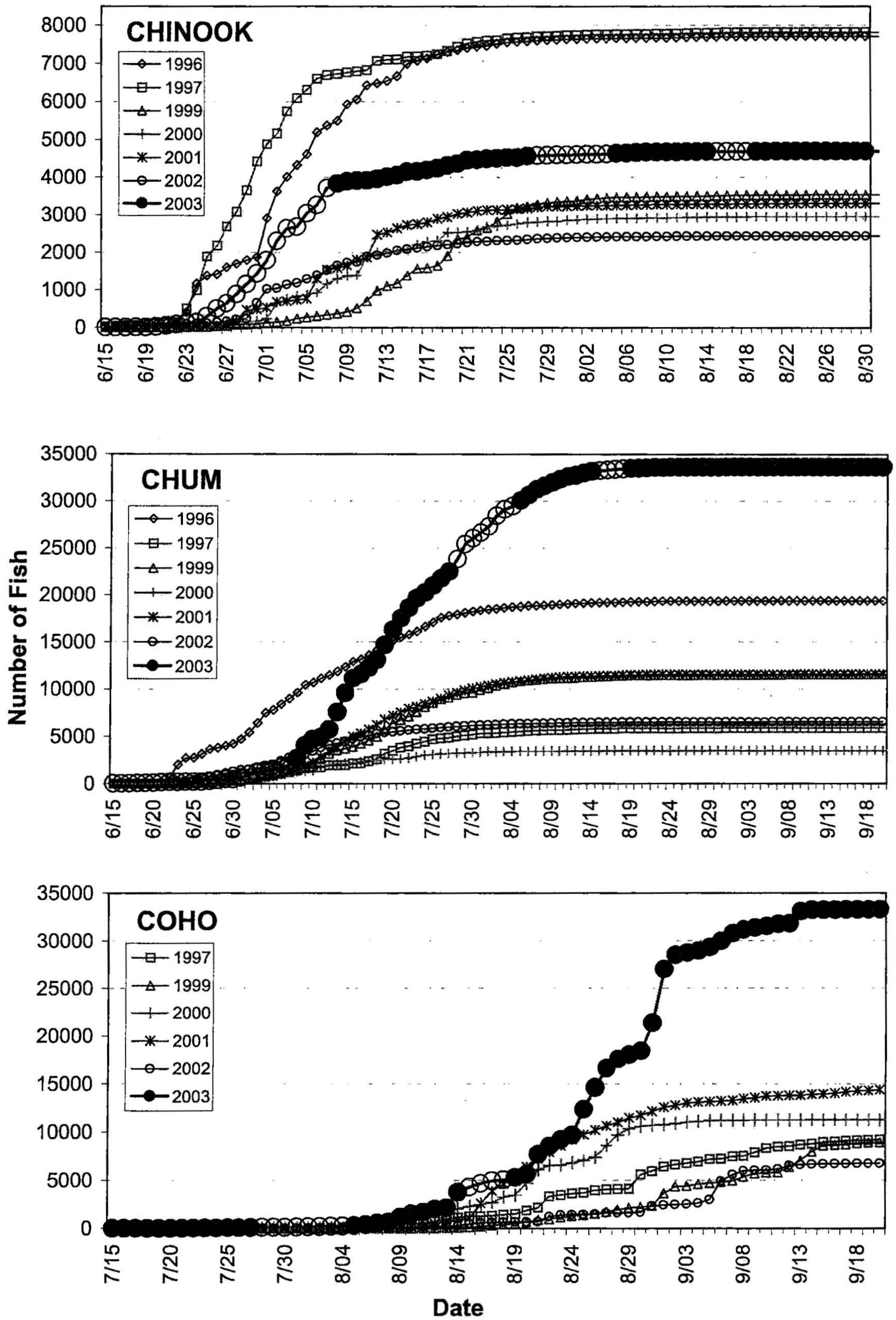


Figure 6. Historical cumulative passage of chinook, chum, and coho salmon at George River weir.

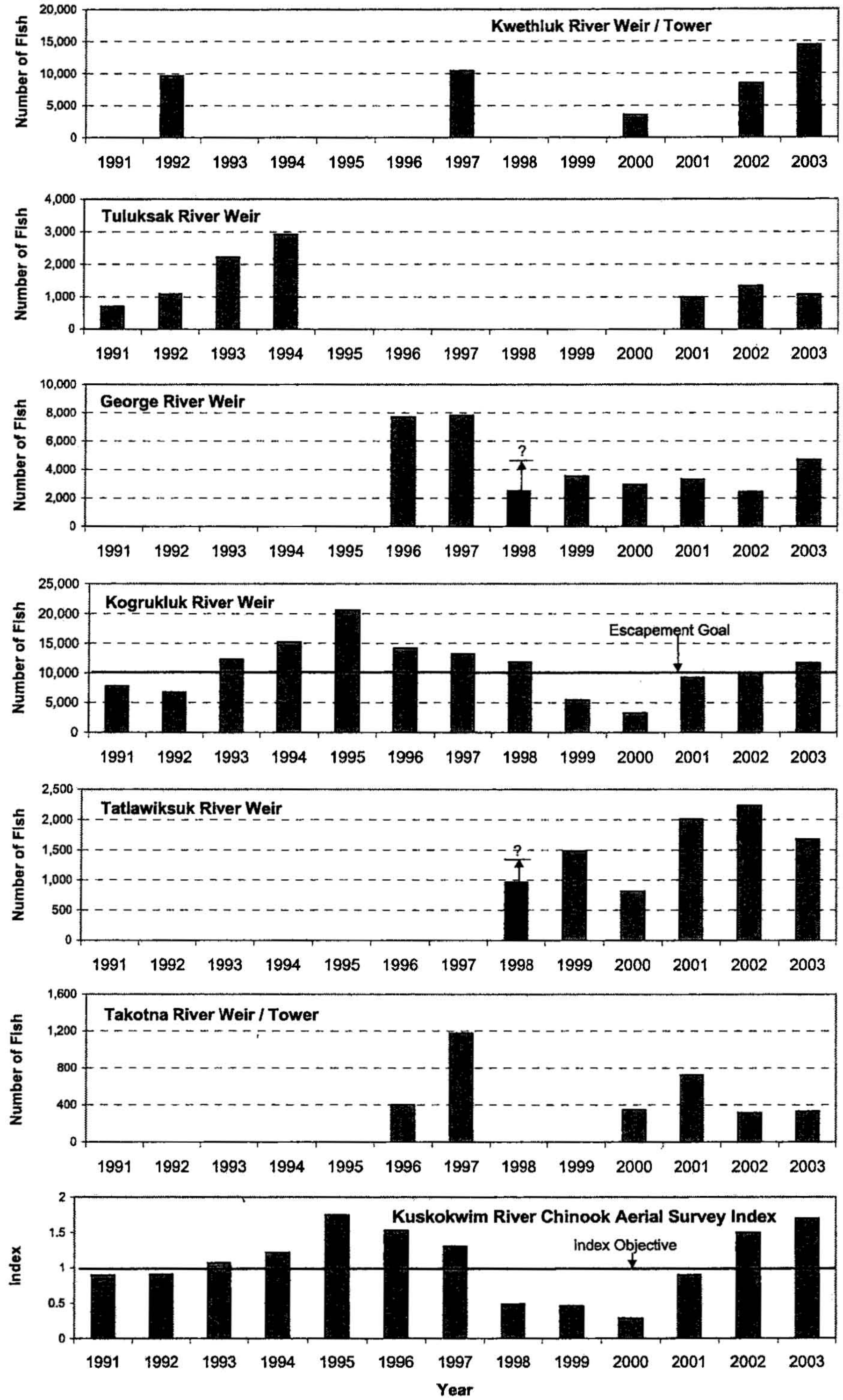


Figure 7. Chinook salmon escapement into six Kuskokwim River tributaries, and Kuskokwim River chinook salmon aerial survey indicies, 1991 through 2003.

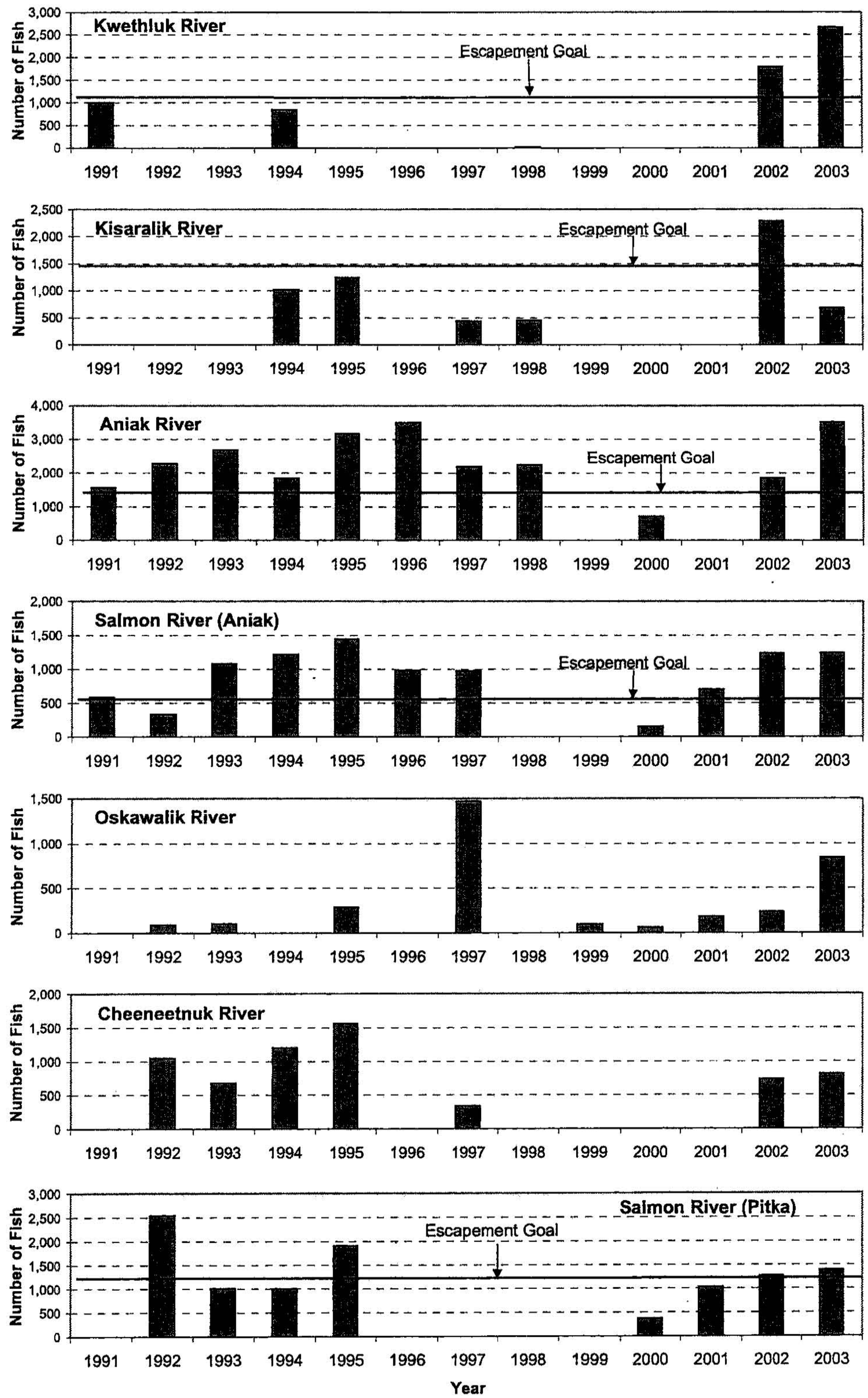


Figure 8. Aerial survey counts of chinook salmon in seven Kuskokwim River tributaries, 1991 through 2003.

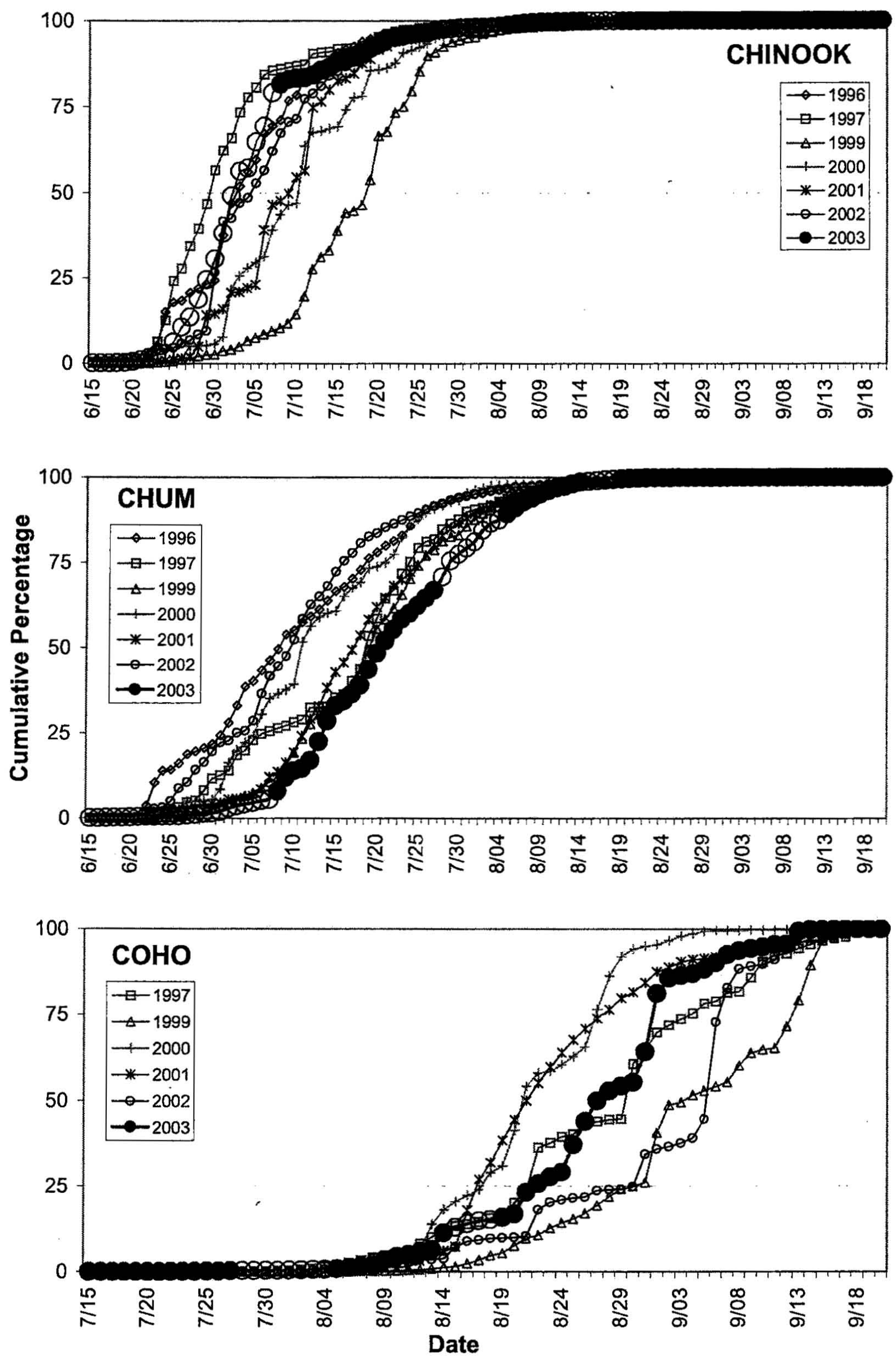


Figure 9. Historical cumulative percent passage of chinook, chum, and coho salmon at George River weir.

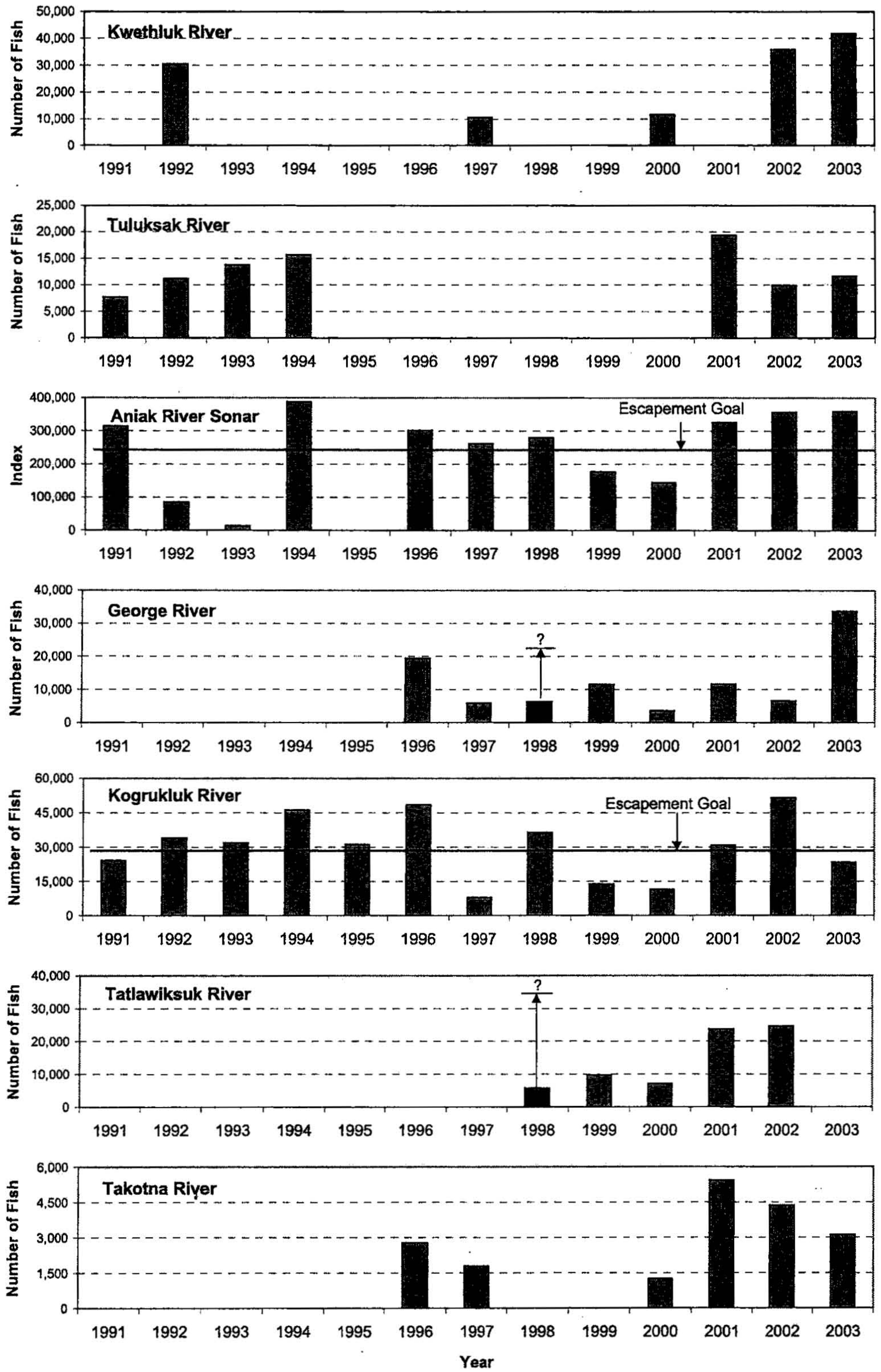


Figure 10. Chum salmon escapement into seven Kuskokwim River Tributaries, 1991 through 2003.

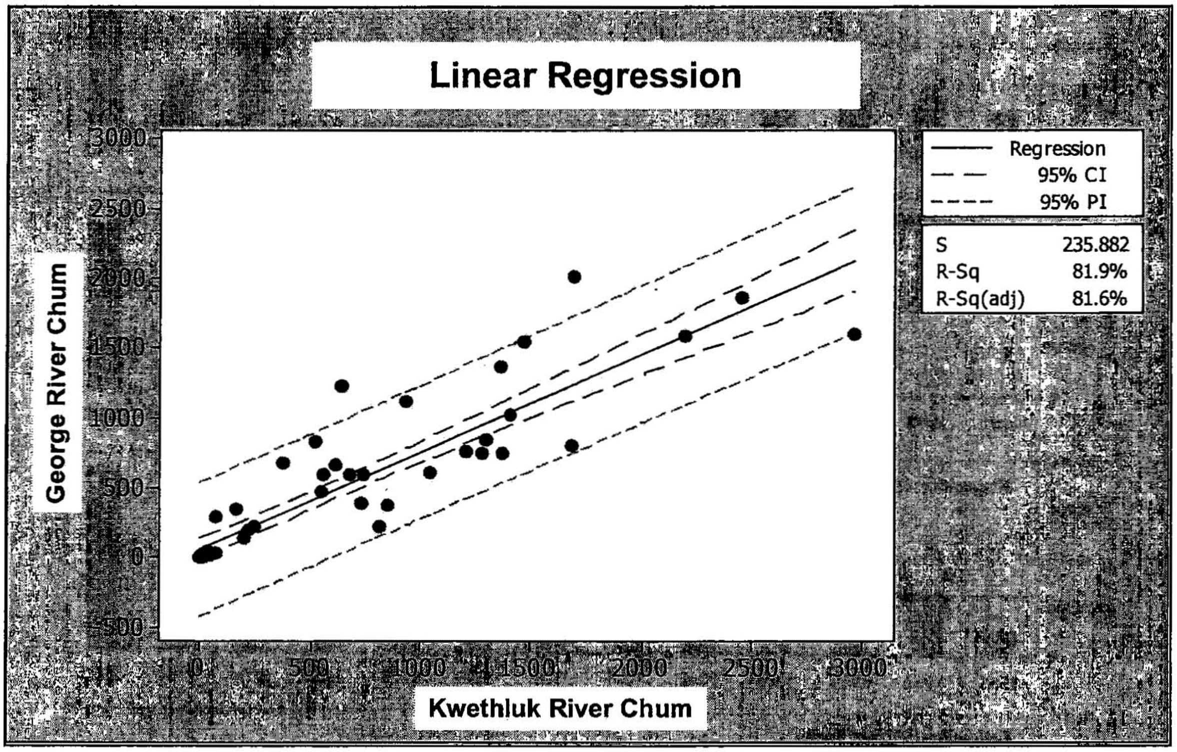


Figure 11. Linear regresssion analysis of observed daily chum salmon passage during the operational period at George River weir, and observed daily chum salmon passage during the same time period at Kwethluk River weir, 2003.

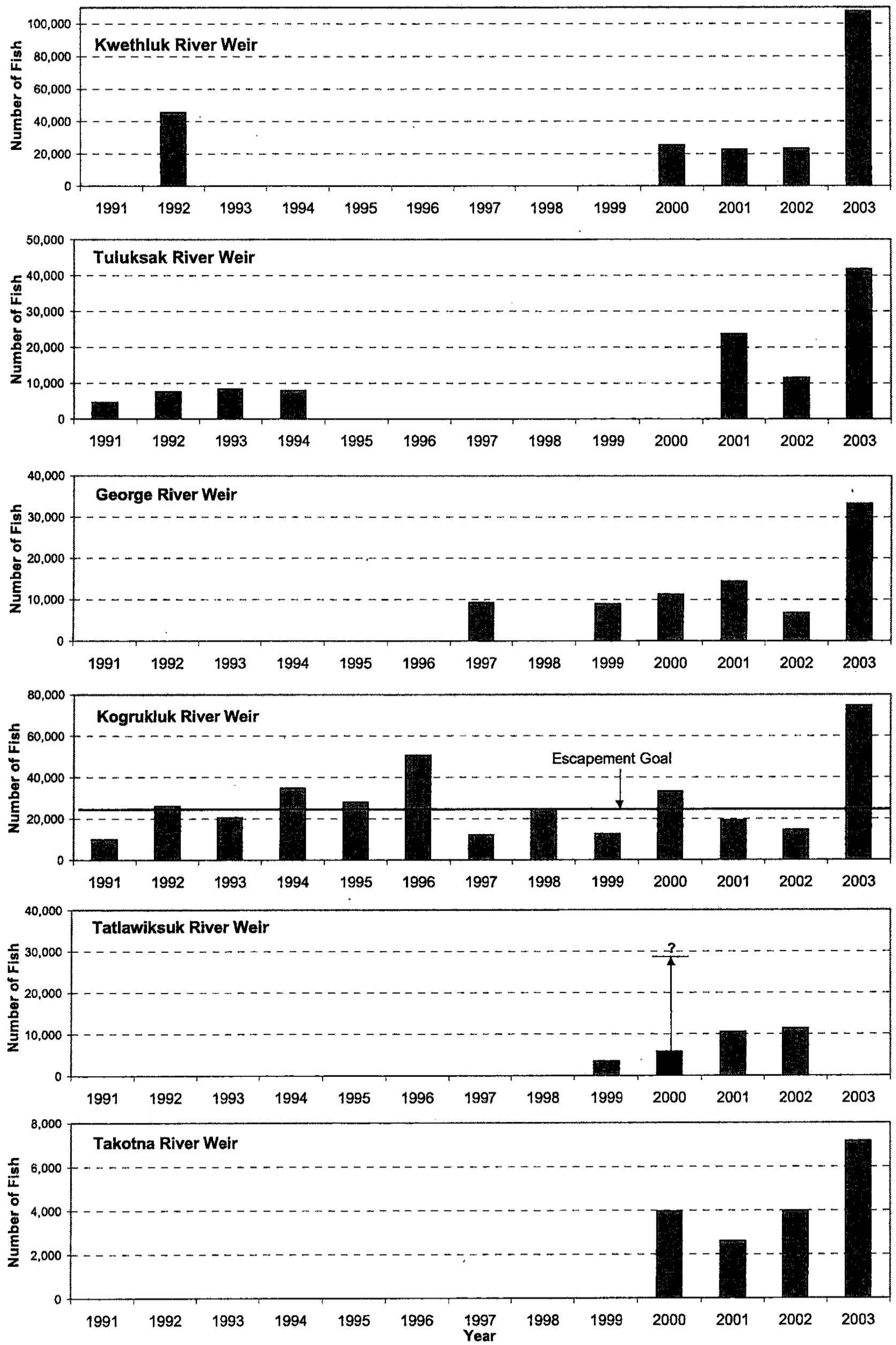


Figure 12. Coho salmon escapement into six Kuskokwim River tributaries, 1991 through 2003.

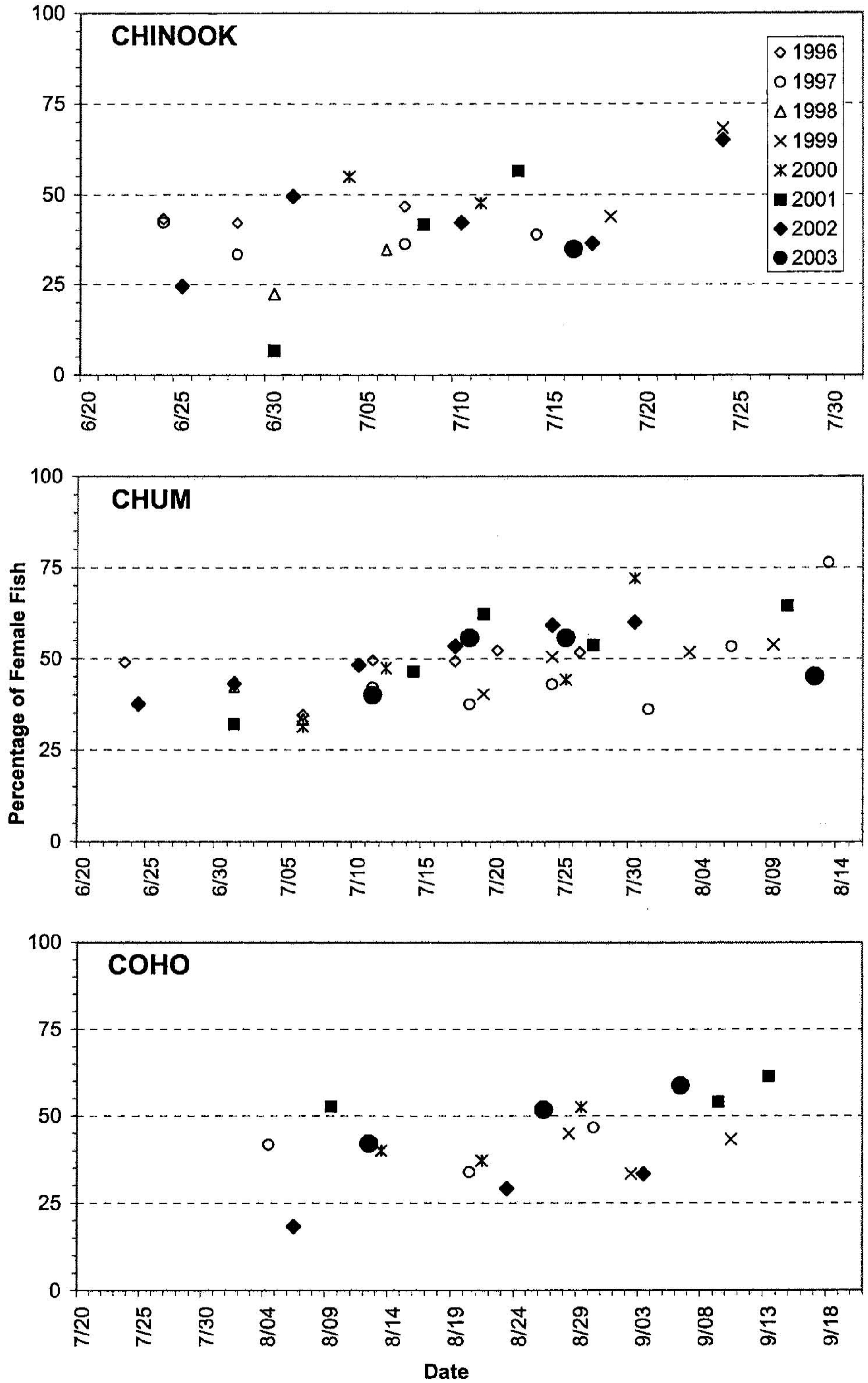


Figure 13. Percentage of female chinook, chum and coho salmon by sample date at George River weir, 1996 through 2003.

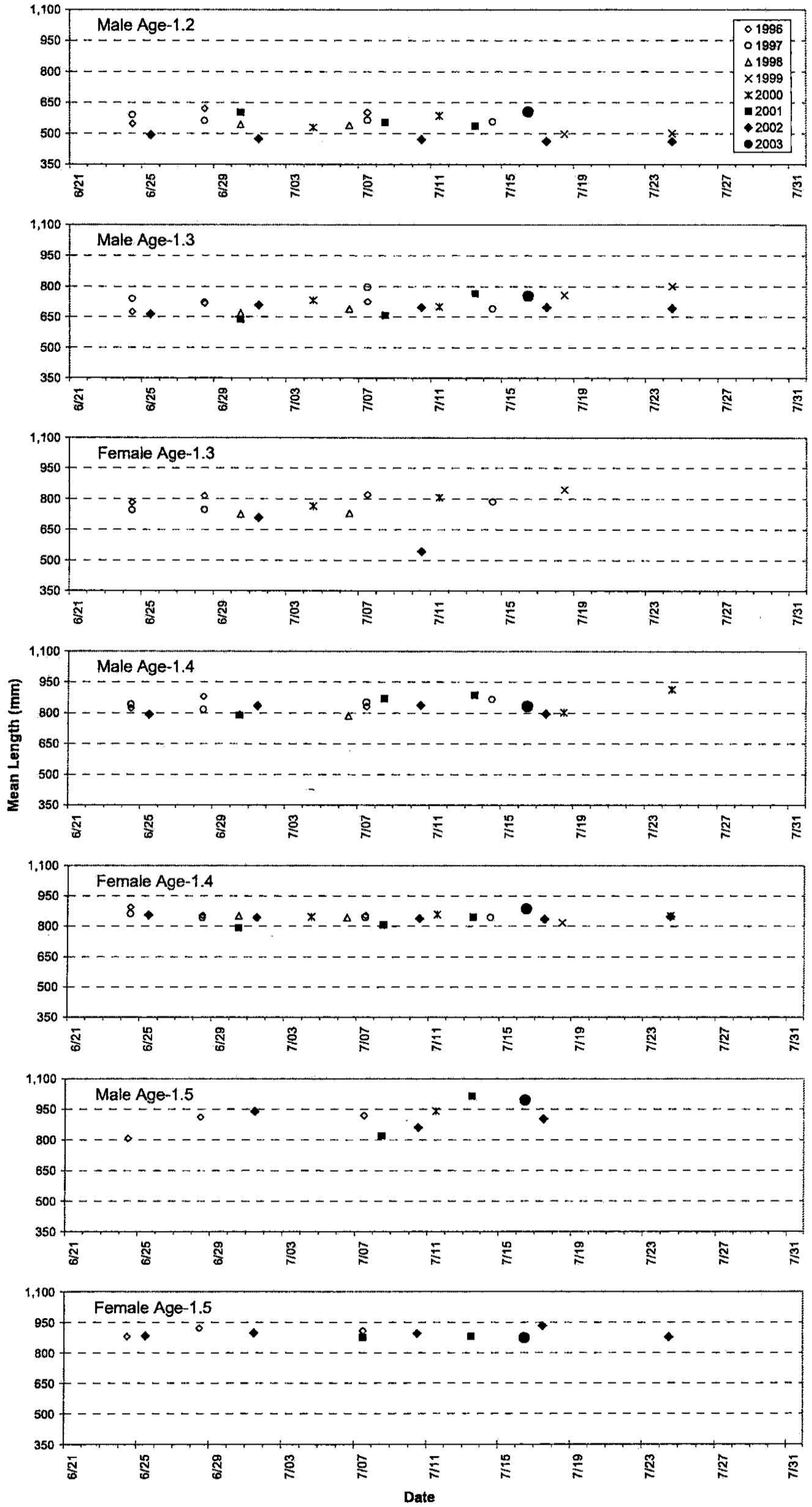


Figure 14. Mean length (mm) at age of chinook salmon by sample date at George River weir 1996 through 2003.

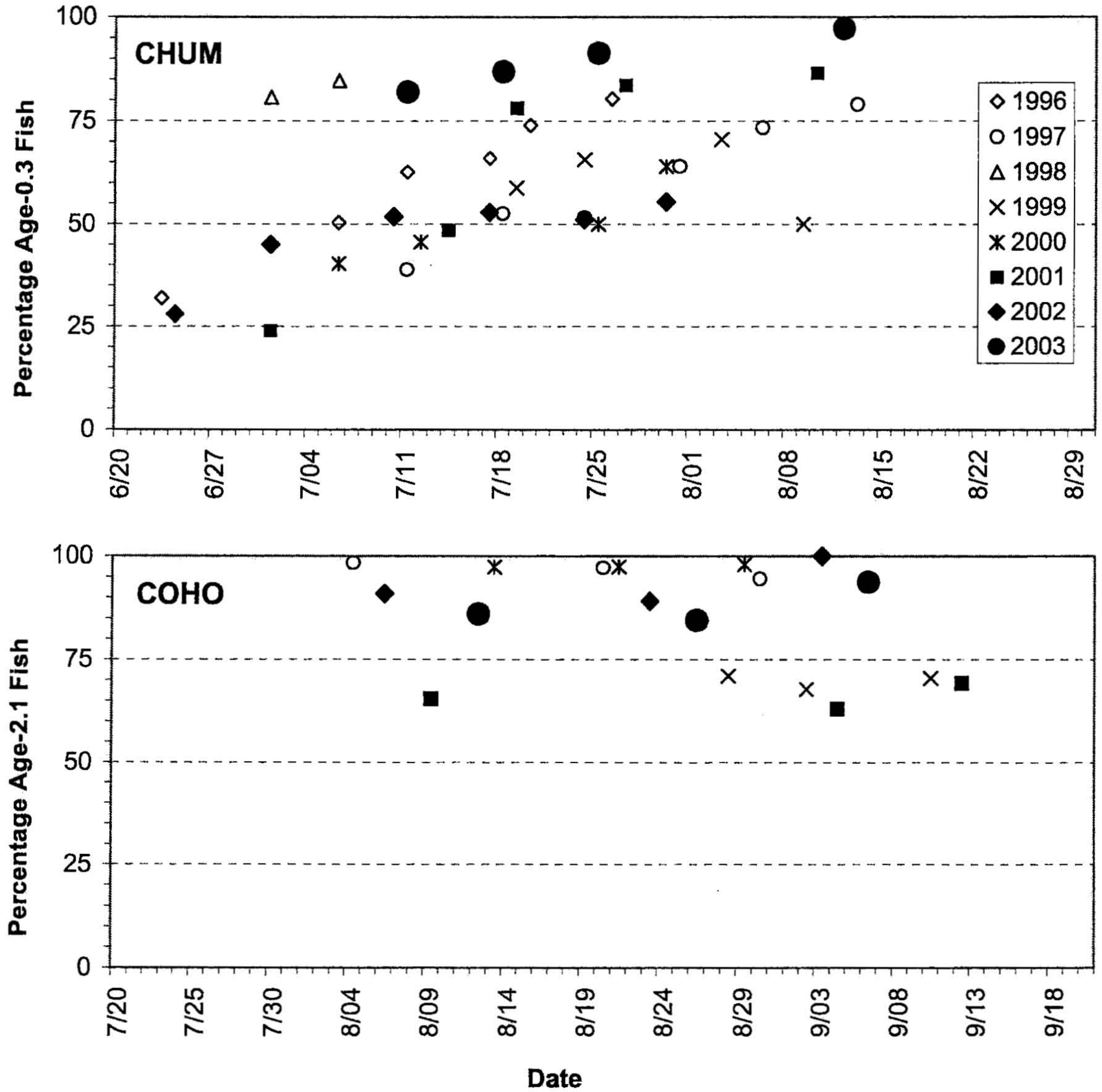


Figure 15. Percentage of age-0.3 chum salmon and age-2.1 coho salmon by sample date at George River weir, 1996 through 2003.

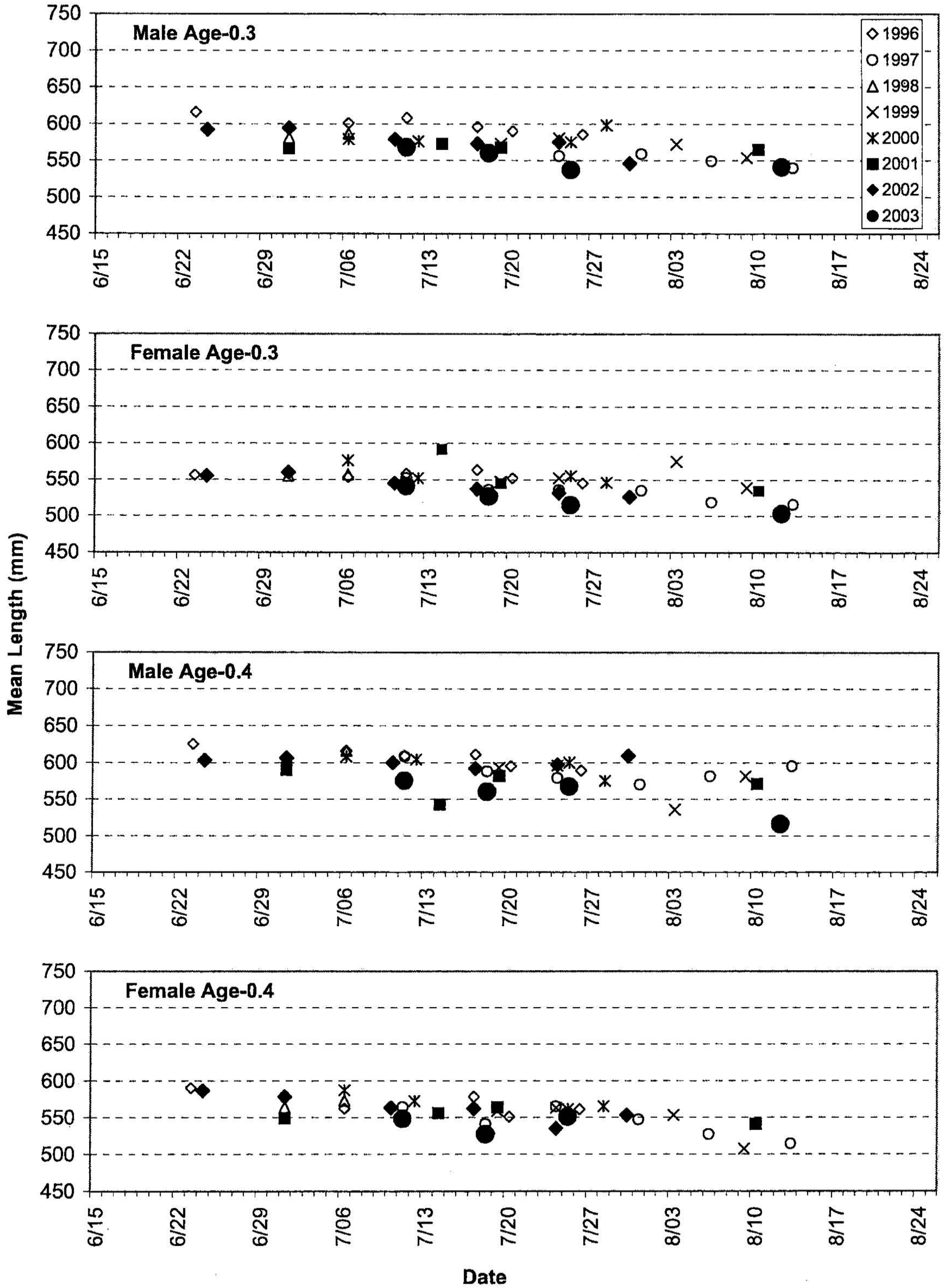


Figure 16. Mean length (mm) at age of chum salmon by sample date at George River weir, 1996 through 2003.

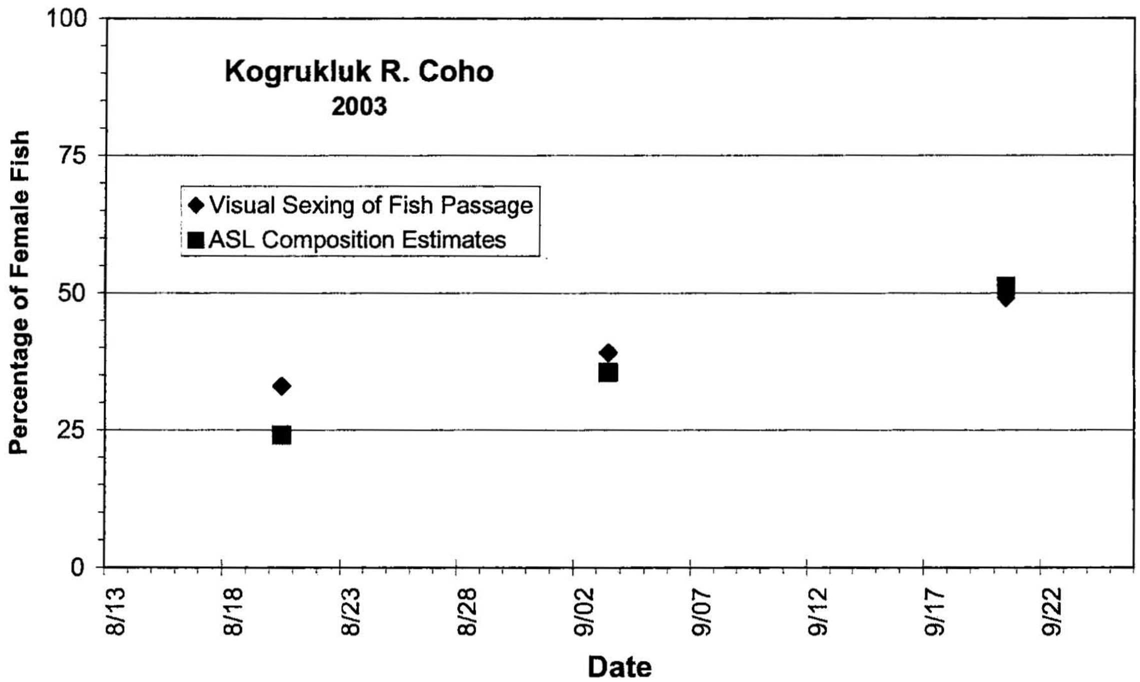


Figure 17. Estimated percent female coho salmon by visual sexing of fish passage and ASL composition estimates at Kogrukluk River weir, 2003.

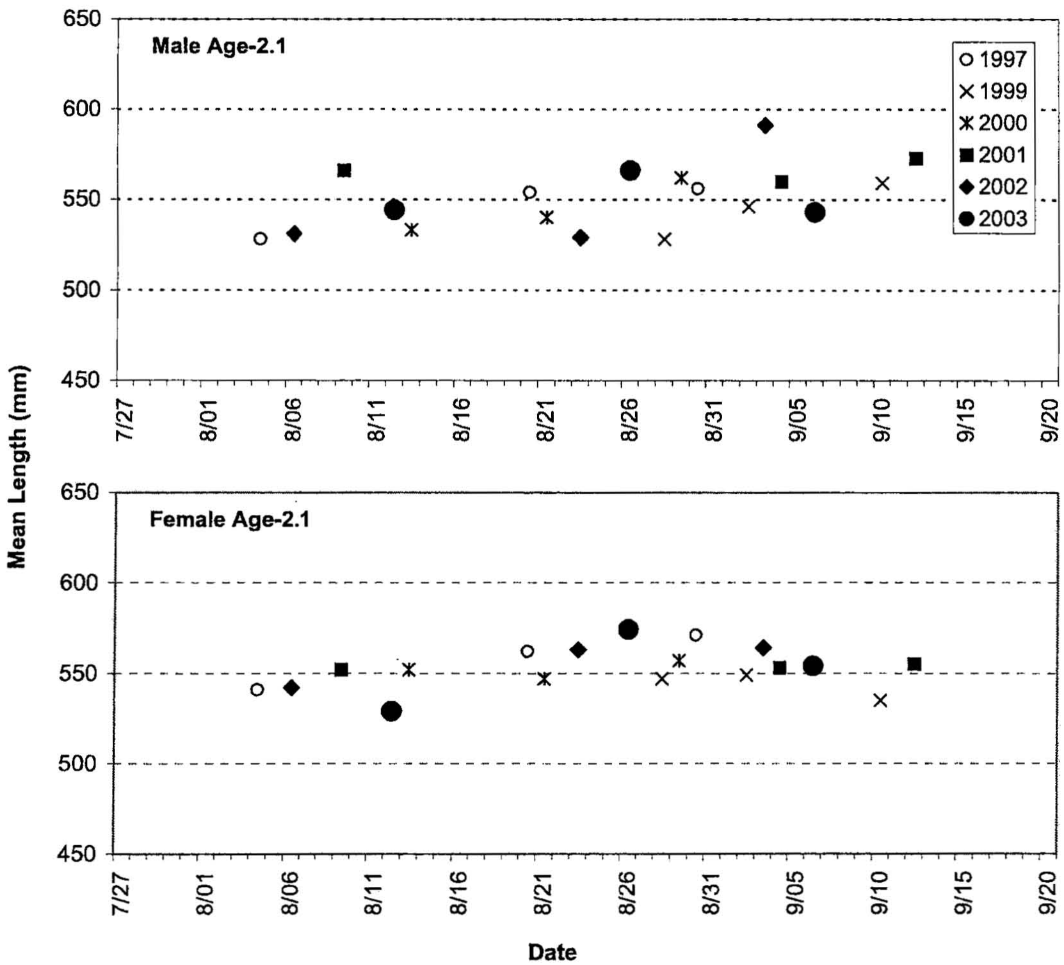


Figure 18. Mean length (mm) of age-2.1 coho salmon by sample date at George River weir, 1997 through 2003.

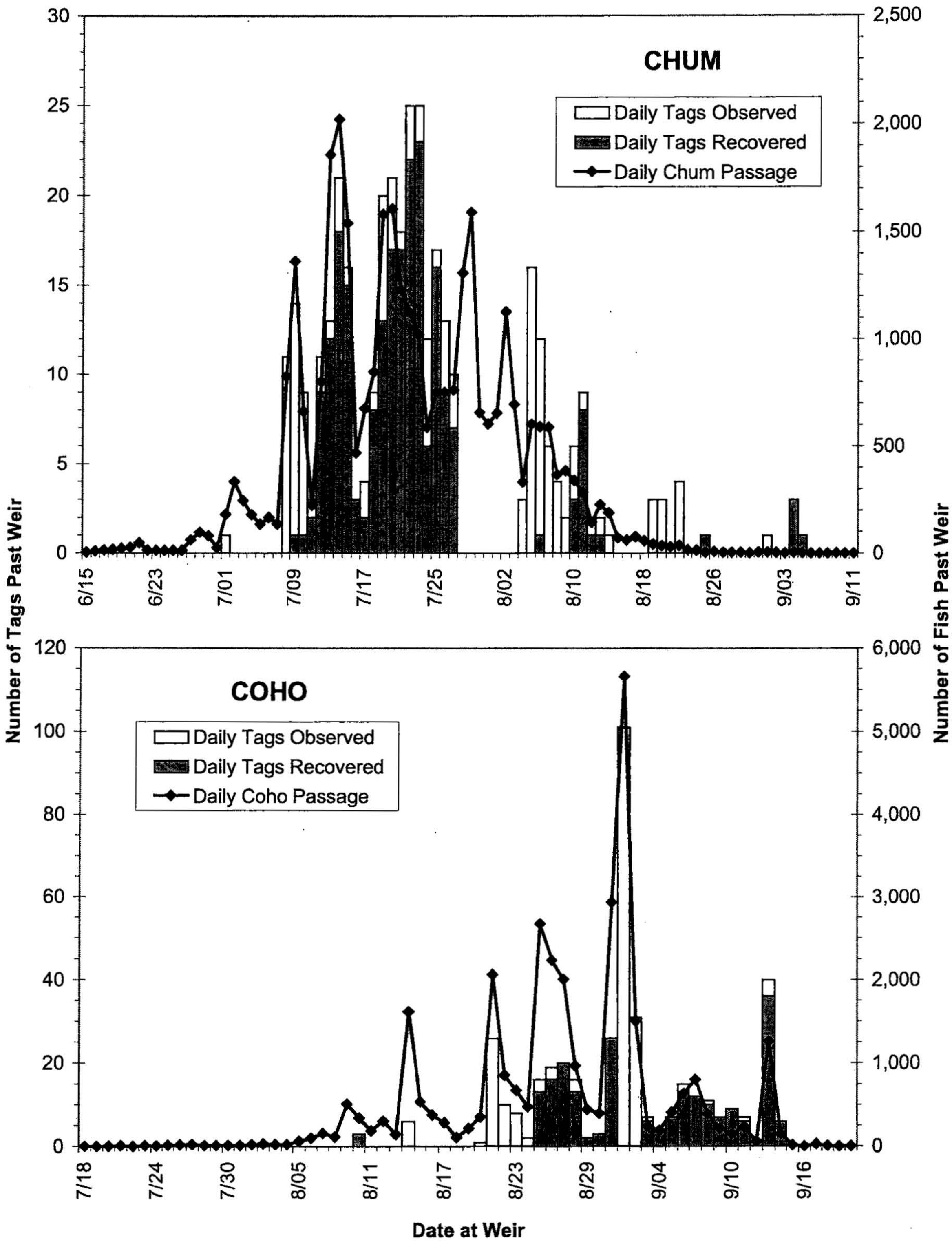


Figure 19. Daily passage of observed and recovered chum and coho salmon tags, and daily passage of chum and coho salmon at George River, 2003.

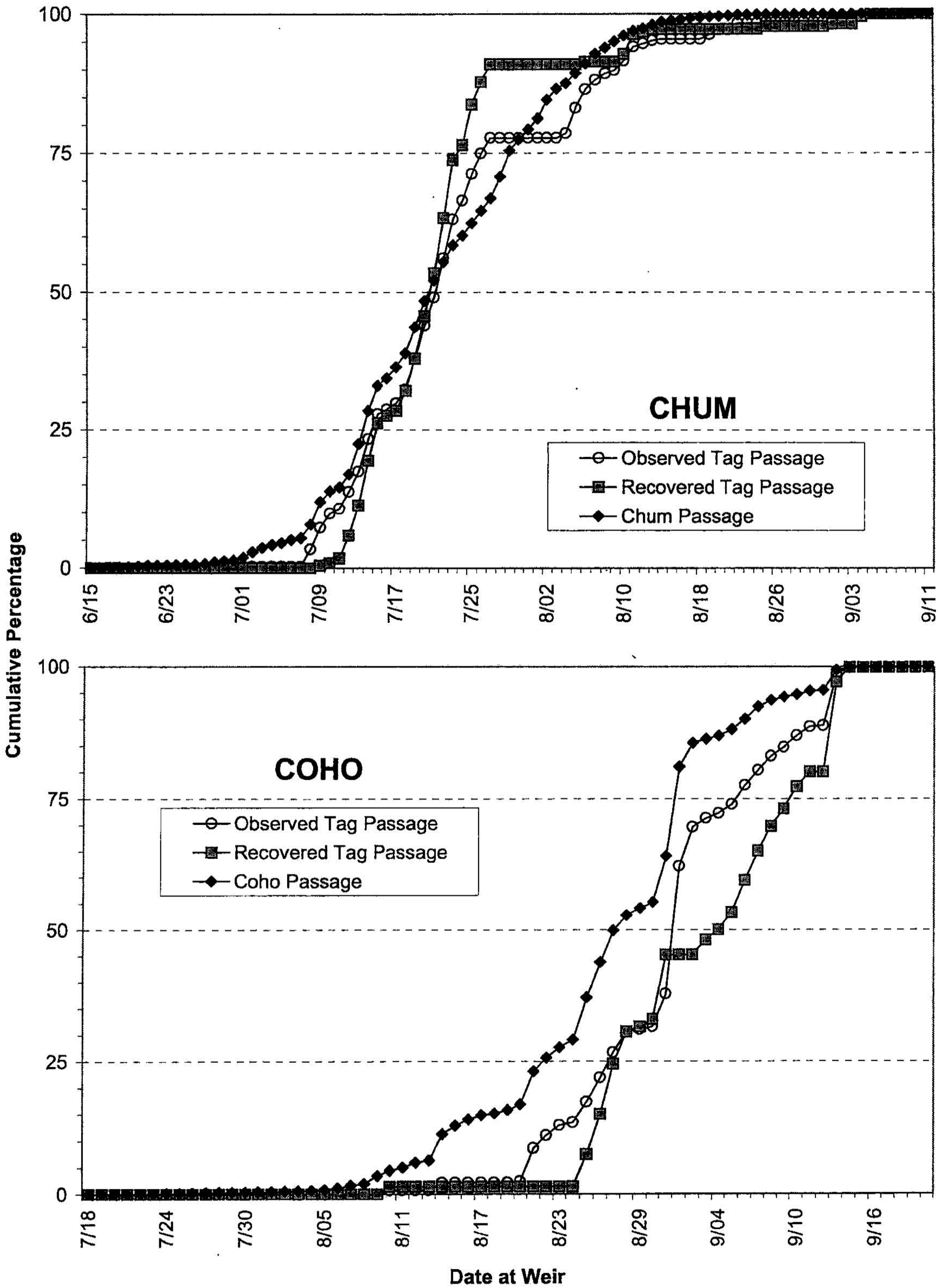


Figure 20. Cumulative percentage of observed and recovered chum and coho salmon tags, and cumulative percentage of chum and coho salmon at George River, 2003.

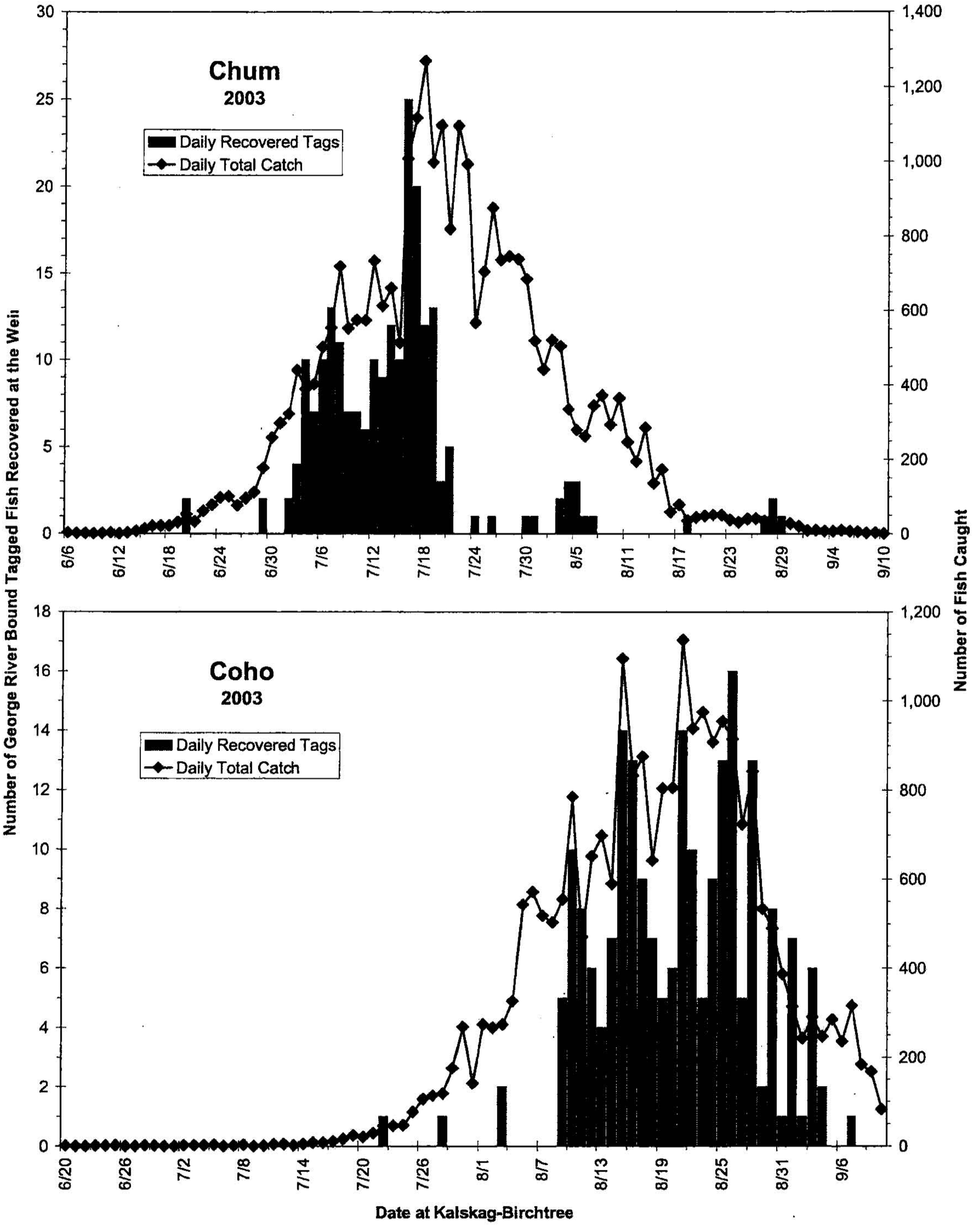


Figure 21. Daily number of George River chum and coho salmon tagged at Kalskag-Aniak, and daily catch of chum and coho salmon at Kalskag-Aniak, 2003.

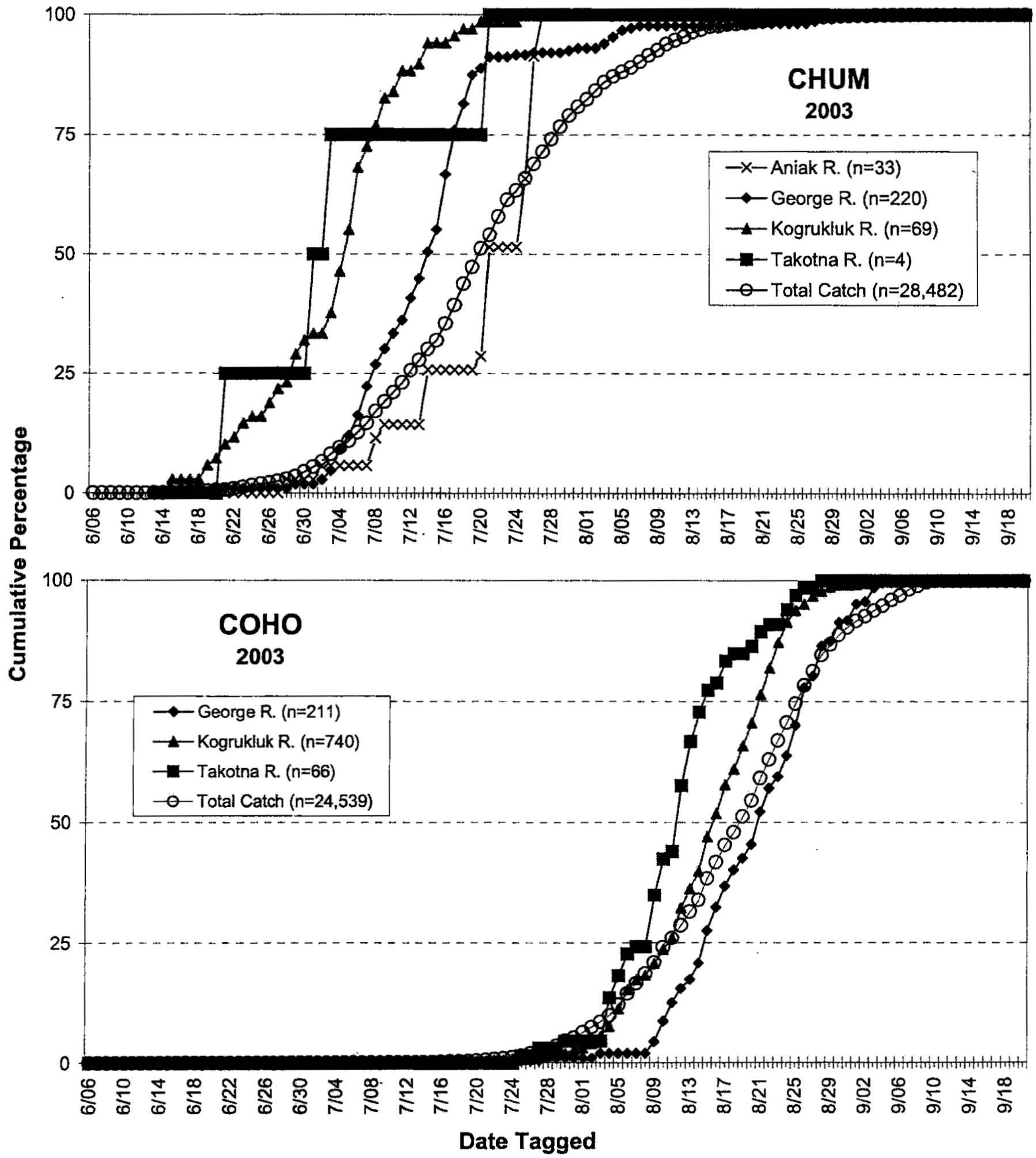


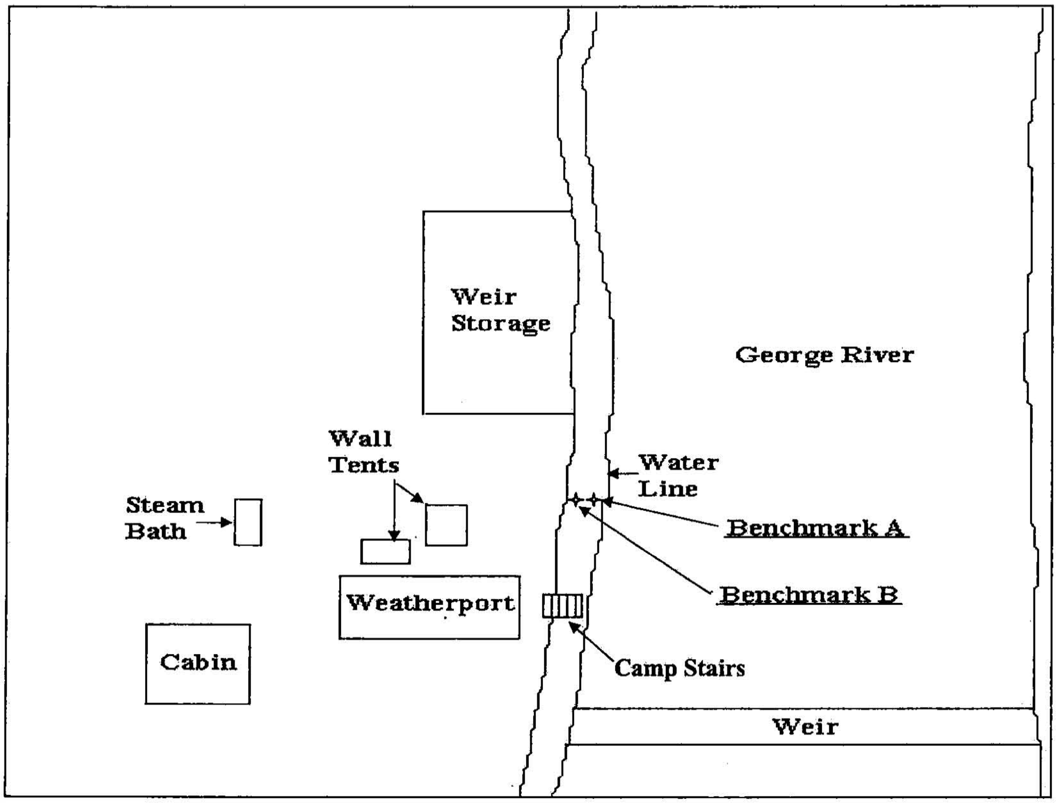
Figure 22. Cumulative percentage by date tagged at Kalskag-Aniak of chum and coho salmon tags recovered at Aniak River sonar, and the Takotna, Kogrukluk, and George River weirs, plus cumulative percentage of the total chum and coho salmon catch from the Kalskag-Aniak tagging site, 2003.

APPENDIX

APPENDIX A. History of aerial spawning ground surveys of the George River drainage.

Location	Date of Survey	Observer	Survey Conditions	Species			Comments
				Chinook	Chum	Coho	
Main Stem	Jul 23 2002	John Linderman	Good	469	320	0	surveyed from weir site to 63 mi upstream
	Jul 27&28 2001	John Linderman	Good	1,143	472	0	surveyed from weir site to 63 mi upstream
	Jul 28 1995	Charlie Burkey	Good	1,173	420	0	surveyed mouth to 25 miles upstream
	Jul 30 1993	Charlie Burkey	Fair	75	0	0	surveyed East Fork confluence to 20 miles upstream
	Jul 18 1976	Gary Schaefer	Good	199	1,298	0	surveyed mouth to 40 miles above North Fork confluence
	Oct 1 1976	Gary Schaefer	Good	0	0	0	surveyed mouth to 5 miles above North Fork confluence
	Aug 1 1975	Fritz Kuhlman	Fair	28	717		
	Jul 16 1960	Unknown	Excellent	526	470		
East Fork	Jul 24 2002	John Linderman	Poor	135	40	0	surveyd from mainstem confluence to 28 mi upstream
	Jul 27 2001	John Linderman	Poor	27	0	0	surveyd from mainstem confluence to 37 mi upstream
	Jul 24 1980	Dan Schniederhan	Fair	89	3,479	0	surveyed mouth to headwaters
	Jul 18 1976	Gary Schaefer	Fair	a few	a few		
North Fork	Jul 28 2001	John Linderman	Fair	12	0	0	surveyd from mainstem confluence to 15 mi upstream
	Jul 18 1976	Gary Schaefer	Good	a few	200	0	
	Aug 1 1975	Fritz Kuhlman	Fair	0	123	0	
	Aug 1 1975	Fritz Kuhlman	Good	3	20	0	unnamed tributary
South Fork	Jul 27 2001	John Linderman	Fair	12	0	0	surveyed 15 mi upstream from E. Fork confluence

APPENDIX B. George River benchmark locations and descriptions.



Benchmark A:

- Established in 2000.
- Benchmark consists of a 4-ft. x 1-in. steel pipe driven vertically into the gravel bank, with approximately 4-in of the pipe exposed above the gravel.
- Represents a river stage measurement of 85 cm from its top.
- This benchmark is located approximately 30-yds. upstream of the camp stairs, and approximatley 3-ft. up the bank from the water line at average water levels.

Benchmark B:

- Established in 2000.
- Benchmark consists of a 4-ft. x 1-in. steel pipe driven vertically into the gravel bank, with approximately 4-in of the pipe exposed above the gravel.
- Represents a river stage measurement of 93 cm from its top.
- This benchmark is located approximately 30-yds. upstream of the camp stairs, and approximatley 4-ft. up the bank from the water line at average water levels.

note: The descriptions above represent the only semi-permanent benchmarks which exist to date at the George River weir project. Benchmarks used prior to 2000 were established in each year of project operations, but were subsequently washed-out after project operations ended.

APPENDIX C. Historical carcass counts of chinook, chum, and coho salmon at George River weir.

	Daily Carcass Passage																							
	Chinook								Chum								Coho							
Date	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003	1996	1997	1998	1999	2000	2001	2002	2003
6/15		0								0								0						
6/16		0								0								0						
6/17		0			0					0			0					0			0			
6/18		0			0					0			0					0			0			
6/19		0			0					0			0					0			0			
6/20		0			0					0			0					0			0			
6/21	0	0			0		0		0	0			0		0		0	0			0		0	
6/22	0	0	0		0		0		0	0	0		0		0		0	0	0		0		0	
6/23	0	0	0		0		0		0	0	0		0		1		0	0	0		0		0	
6/24	0	0	0		0		0		0	0	0		0		0		0	0	0		0		0	
6/25	1	0	0		0	0	0		4	0	0		0	0	0		0	0	0		0	0	0	
6/26	0	0	0		1	0	0		1	0	0		0	1	2		0	0	0		0	0	0	
6/27	0	0	0		0	0	0		0	0	0		0	0	1		0	0	0		0	0	0	
6/28	0	0	0		0	0	1		1	0	0		0	1	3		0	0	0		0	0	0	
6/29	3	0	0		0	0	1		5	0	0		1	0	2		0	0	0		0	0	0	
6/30	0	4	0		0	0	0		4	0	2		0	0	1		0	0	0		0	0	0	
7/01	0	0	0		0	0	0	0	6	0	2		0	0	3	0	0	0	0		0	0	0	0
7/02	1	0	0		0	0	0	0	10	1	3		0	3	8	0	0	0	0		0	0	0	0
7/03	1	0	0		0	0	0		8	0	4		3	0	6		0	0	0		0	0	0	
7/04	2	0	0		0	0	0		13	0	2		0	0	7		0	0	0		0	0	0	
7/05	2	1	0		0	0	0		11	0	10		0	0	5		0	0	0		0	0	0	
7/06	0	1	0		0	0	0		23	0	10		0	10	11		0	0	0		0	0	0	
7/07	2	0	0		0	0	0		25	4			0	1	11		0	0	0		0	0	0	
7/08	0	0			0	0	0	0	19	2			0	3	9	0	0	0			0	0	0	0
7/09	6	2			0	1	0	0	40	4			4	2	11	1	0	0			0	0	0	0
7/10	10	0			0	0	0	0	53	2			7	0	18	3	0	0			0	0	0	0
7/11	10	1			0	0	0	0	44	3			0	10	17	6	0	0			0	0	0	0
7/12	8	1			0	0	1	0	55	4			0	11	20	3	0	0			0	0	0	0
7/13	3	1			0	0	3	0	33	6			0	1	14	2	0	0			0	0	0	0
7/14	3	2		0	0	0	1	0	50	7		14	7	9	22	7	0	0		0	0	0	0	0
7/15	5	1		1	0	1	3	0	45	4		15	0	9	27	19	0	0		0	0	0	0	0
7/16	7	3		0	0	0	3	0	69	12		4	0	6	18	2	0	0		0	0	0	0	0
7/17	8	1		1	0	0	1	1	73	3		7	0	22	26	12	0	0		0	0	0	0	0
7/18	10	0		0	0	1	1	0	65	7		37	0	14	31	11	0	0		0	0	0	0	0
7/19	5	1		1	0	0	2	0	56	9		18	0	8	16	11	0	0		0	0	0	0	0
7/20	14	2		1	0	0	2	0	130	17		21	0	0	15	24	0	0		0	0	0	0	0
7/21	36	0		0	0	0	2	0	126	0		8	9	0	34	16	0	0		0	0	0	0	0
7/22	29	0		2	10	1	1	0	143	0		23	0	25	41	50	0	0		0	0	0	0	0
7/23	11	2		0	0	0	3	1	108	21		8	0	0	34	40	0	0		0	0	0	0	0
7/24	9	0		3	0	0	0	3	72	0		9	0	0	38	43	0	0		0	0	0	0	0
7/25	10	0		1	1	2	1	3	126	30		18	10	28	37	52	0	0		0	0	0	0	0
7/26		0		1	0	0	3	2		0		21	0	0	48	56		0		0	0	0	0	0
7/27		6		2	1	4	4	2		76		28	19	5	45	101		1		0	0	0	0	0
7/28		1		4	2	9	4			48		20	23	23	27			0		0	0	0	0	
7/29		1		0	0	12	6			28		0	0	17	25			0		0	0	0	0	
7/30		4	6	16	2	17	6			65	26	62	14	32	22			0	0	0	0	0	0	
7/31		0	0	5	4	11	4			0	0	30	11	33	29			0	0	0	0	0	0	
8/01		0	10	2		18	6			0	24	15		27	26			0	0	0		0	0	
8/02		0	13	7		16	5			0	51	26		35	20			0	0	0		0	0	
8/03		0		12	0	15	2			0		21	0	39	17			0		0	0	0	0	
8/04		0		12	0	22	3	6		0		30	0	27	10	89		0		0	0	0	0	0
8/05		0		21	0	22	1	3		0		27	0	33	15	48		0		0	0	0	0	0
8/06		2		7	5	13	1	6		10		10	4	31	13	74		0		0	0	0	0	0
8/07		1		23	7	21	2	7		15		21	7	23	8	60		1		0	0	0	1	0
8/08		0		0	5	12	2	11		0		0	0	35	5	80		0		0	0	0	0	0
8/09		6		30	0	6	0	13		27		31	0	34	6	99		0		0	0	0	0	0
8/10		4		35	12	18	0	5		25		30	4	49	0	114		0		0	0	0	0	0
8/11		0		0	0	4	1	4		14		0	0	31	5	187		0		0	0	0	0	0
8/12		2		25	7	5	1	0		3		47	5	39	2	230		6		0	0	0	0	0
8/13		1		25	0	1	0	2		13		37	0	39	2	211		0		0	0	0	0	0
8/14		0		12	0	5	0	2		0		27	0	45	5	121		0		0	0	0	0	0
8/15		4		6	10	0	0			11		11	4	58	1			0		0	0	0	0	
8/16		0		2	0	0	0			0		6	0	8	3			0		0	0	1	0	

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APPENDIX C. (page 2 of 2)

Daily Carcass Passage

Date	Chinook 1996	Chinook 1997	Chinook 1998	Chinook 1999	Chinook 2000	Chinook 2001	Chinook 2002	Chinook 2003
8/17		2		0	0	0	0	
8/18		0		5	0	0	0	0
8/19		0		0	0		0	0
8/20		0		2	0		1	0
8/21		0		4	0		0	0
8/22		0		2	0		0	0
8/23		0		1	0		0	0
8/24		0		1	0		0	0
8/25		0		2	0		0	0
8/26		0		1	5		0	0
8/27		0		0	0	0	0	0
8/28		0		0	0	0	0	0
8/29		0		2	0	0	0	0
8/30		0		0	0	0	0	0
8/31		0		0	0	0	0	0
9/01		0		0	0	0	0	0
9/02		0		2	0	0	0	0
9/03		0		0	0	1	0	0
9/04		1		0	0	0	0	0
9/05		0		0	0	0	0	0
9/06		0		0	1	0	0	0
9/07		0		0	0	0	0	0
9/08		0		0	0	0	0	0
9/09		0		0	0	0	0	0
9/10		0		0	0	0	0	0
9/11		0		0	0	0	0	0
9/12		0		0	0	0	0	0
9/13		0		0	0	0	0	0
9/14		0		1	0	0	0	0
9/15		0		0	0	0	0	0
9/16				0	0	1	0	0
9/17				0		0	0	0
9/18				0		0	0	0
9/19				0		0	0	0
9/20				0		0	0	
9/21				0		1		
9/22				0		0		
9/23				0				
9/24				0				
9/25				0				
Carcass Total	196	58	29	280	73	240	78	71
Live Passage	7,716	7,823	2,505	3,548	2,960	3,309	2,444	4,693
% of Live Passage	2.5	0.7	1.2	7.9	2.5	7.3	3.2	1.5

Date	Chum 1996	Chum 1997	Chum 1998	Chum 1999	Chum 2000	Chum 2001	Chum 2002	Chum 2003
8/17		7		5	0	0	0	
8/18		8		13	0	0	0	0
8/19		0		12	0		0	96
8/20		5		19	0		1	85
8/21		4		16	0		1	67
8/22		5		24	0		0	50
8/23		0		7	0		0	41
8/24		5		7	0		0	32
8/25		2		7	0		1	22
8/26		4		10	5		1	34
8/27		0		3	0	4	1	14
8/28		5		3	0	0	0	32
8/29		2		3	0	1	0	9
8/30		3		2	0	1	0	1
8/31		3		0	0	0	0	14
9/01		0		2	1	0	0	0
9/02		0		3	0	3	0	11
9/03		0		0	0	3	0	3
9/04		1		0	0	2	0	2
9/05		0		0	0	1	1	6
9/06		0		0	1	0	1	2
9/07		0		0	0	1	0	1
9/08		0		0	1	1	0	1
9/09		0		2	0	1	0	1
9/10		6		2	0	0	0	2
9/11		0		0	0	1	0	0
9/12		0		0	0	0	0	0
9/13		0		0	0	0	1	0
9/14		0		1	0	0	1	1
9/15		0		0	0	0	0	0
9/16				1	0	0	0	0
9/17				0		0	0	0
9/18				0		0	0	1
9/19				0		0	0	1
9/20				0		1	0	
9/21				0		0		
9/22				0		0		
9/23				0				
9/24				0				
9/25				0				
Carcass Total	1,418	531	134	824	140	847	832	2,301
Live Passage	21,670	5,907	6,391	11,552	3,492	11,601	6,543	33,666
% of Live Passage	7.3	9.0	2.1	7.1	4.0	7.3	12.7	6.8

Date	Coho 1996	Coho 1997	Coho 1998	Coho 1999	Coho 2000	Coho 2001	Coho 2002	Coho 2003
8/17		0		0	0	0	0	
8/18		0		0	0	0	0	0
8/19		0		0	0		0	0
8/20		0		0	0		1	0
8/21		0		0	0		1	0
8/22		0		0	0		0	0
8/23		0		0	0		0	0
8/24		0		0	0		0	0
8/25		0		0	0		0	1
8/26		0		0	0		0	0
8/27		0		0	0	0	0	0
8/28		1		0	0	0	0	0
8/29		0		0	0	0	0	0
8/30		0		0	0	0	0	0
8/31		0		0	0	1	0	1
9/01		0		0	0	0	1	0
9/02		0		0	0	0	0	0
9/03		0		0	0	0	0	0
9/04		0		0	0	0	1	0
9/05		0		0	0	0	0	0
9/06		0		0	0	0	0	0
9/07		0		0	0	0	3	0
9/08		0		0	0	0	0	1
9/09		0		0	0	1	1	1
9/10		3		0	0	0	1	0
9/11		0		0	0	0	2	0
9/12		0		0	0	1	0	1
9/13		0		0	0	0	0	1
9/14		0		0	0	0	0	1
9/15		0		0	0	0	2	0
9/16				0	0	0	0	2
9/17				0		0	0	1
9/18				1		1	0	1
9/19				1		0	0	0
9/20				0		0	0	
9/21				0		0		
9/22				1		1		
9/23				1				
9/24				0				
9/25				0				
Carcass Total	0	12	0	4	0	6	14	11
Live Passage	173	9,210	52	8,914	11,262	14,398	6,759	33,280
% of Live Passage	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0

= Weir was not operational

APPENDIX D. Daily water conditions and weather at George River weir, 2003.

Date	Oservation Time	River Stage (cm)	Temperature (°C) Water	Air	Water Color	Sky [a] (a.m.)	Precip. [b] (a.m.)	Wind Vel. (knotts)
6/10	730	73	7	10	Moderate Turbidity	4	A	0
6/11	730	77	7	11	Moderate Turbidity	4	0	0
6/12	1030	78	9	18	High Turbidity	1	A/F	0
6/13	730	100	9	7.5	High Turbidity	1	0	0
6/14	730	80	9	6	Moderate Turbidity	1	0	0
6/15	730	75	10	7	Moderate Turbidity	1	0	0
6/16	730	71	10	12	Moderate Turbidity	4	0	S5-10
6/17	730	68	9	6	Moderate Turbidity	2	0	0
6/18	730	65	10	12	Moderate Turbidity	2	0	0
6/19	730	64	10	12	Moderate Turbidity	4	B	0
6/20	730	97	9	9	High Turbidity	5	0	0
6/21	730	91	9	10	High Turbidity	4	A	0
6/22	730	81	9	10	High Turbidity	4	A	0
6/23	730	76	9	10	Moderate Turbidity	1	0	0
6/24	730	70	10	10	Moderate Turbidity	3	0	0
6/25	730	69	10	10.5	Moderate Turbidity	4	0	0
6/26	730	66	9	6	Moderate Turbidity	0	0	0
6/27	730	62	9	7	Low Turbidity	2	0	0
6/28	730	60	9	5	Low Turbidity	5	0	0
6/29	730	59	10	13	Low Turbidity	4	A	E15-20
6/30	730	56	10	13	Low Turbidity	5	A	0
7/01	730	58	10	13	Low Turbidity	4	A	0
7/02	730	73	10	9	High Turbidity	4	B	0
7/03	730	124	8	10	High Turbidity	4	A	0
7/04	1030	114	9	20	High Turbidity	1	0	0
7/05	730	103	10	10	High Turbidity	4	0	0
7/06	730	98	9	13	High Turbidity	4	0	0
7/07	730	92	9	14	High Turbidity	0	0	0
7/08	730	89	11	11	Moderate Turbidity	0	0	0
7/09	730	82	12	14	Moderate Turbidity	3	0	0
7/10	730	76	12	11	Moderate Turbidity	4	0	0
7/11	730	73	10	12	Low Turbidity	4	A	0
7/12	730	73	9	11	Low Turbidity	2	0	0
7/13	730	73	10	11	Low Turbidity	0	0	0
7/14	730	68	10	12	Low Turbidity	0	0	0
7/15	730	65	10	11	Low Turbidity	4	0	0
7/16	730	60	8	10	Clear	4	0	0
7/17	730	58	8	1	Clear	0	0	0
7/18	730	56	9	12	Clear	4	0	0
7/19	730	53	11	7	Clear	1	0	0
7/20	730	50	13	10	Clear	0	0	0
7/21	730	47	14	12	Clear	0	0	0
7/22	730	45	14	13	Clear	3	0	0
7/23	730	43	14	15	Clear	4	A	S10-15
7/24	730	45	11	12	Clear	4	A	S10-15
7/25	730	51	10	12	Clear	3	A	0
7/26	730	57	11	13	Clear	4	A	0
7/27	730	57	10	13	Clear	4	A	0
7/28	730	118	10	9	Moderate Turbidity	4	B	0
7/29	730	120	8	10	High Turbidity	2	0	0
7/30	730	113	8	11	High Turbidity	4	0	0
7/31	730	112	8	11	High Turbidity	0	0	0
8/01	730	103	10	10	High Turbidity	4	0	0
8/02	730	95	8.5	11	Moderate Turbidity	4	0	0
8/03	730	89	9	11	Moderate Turbidity	4	0	0
8/04	730	85	7	4	Low Turbidity	0	0	0
8/05	730	81	4	2	Low Turbidity	0	0	0
8/06	730	75	9	5	Low Turbidity	1	0	0

-Continued-

APPENDIX D. (page 2 of 2)

Date	Oservation Time	River Stage (cm)	Temperature (°C) Water	Air	Water Color	Sky [a] (a.m.)	Precip. [b] (a.m.)	Wind Vel. (knotts)
8/07	730	71	10	13	Low Turbidity	4	A	0
8/08	730	69	10	15	Clear	4	0	0
8/09	730	68	10	13	Clear	5	0	0
8/10	730	61	13	19	Clear	2	0	0
8/11	730	58	11	15	Clear	4	0	0
8/12	730	59.5	12	14	Clear	4	A	V0-5
8/13	730	69.5	11	13	Clear	4	B	0
8/14	730	74	10	12	Clear	4	B	SE0-15
8/15	730	86	10	11	Moderate Turbidity	4	A	0
8/16	730	89	9	6	Moderate Turbidity	4	0	0
8/17	730	90	8	0	Moderate Turbidity	2	0	0
8/18	730	86	7	6	Moderate Turbidity	0	0	0
8/19	730	83	7	7	Low Turbidity	4	0	0
8/20	730	83	7	1	Low Turbidity	3	0	0
8/21	730	81	9	9	Low Turbidity	4	0	0
8/22	730	78	8	2	Clear	5	0	0
8/23	730	74	8	8	Clear	4	0	0
8/24	730	72	9	10	Clear	4	0	0
8/25	730	70	9	10	Clear	4	B	0
8/26	730	71	9	12	Clear	4	0	0
8/27	730	73	9	9	Clear	4	0	0
8/28	730	69	9	6	Clear	2	0	0
8/29	730	65	8	2	Clear	5	0	0
8/30	730	63	8	8	Clear	4	A	0
8/31	730	62	9	12	Clear	5	0	0
9/01	730	66	8	9	Clear	5	0	0
9/02	730	63	9	9	Clear	4	0	0
9/03	730	57	7	0.5	Clear	5	0	0
9/04	730	55	7	7	Clear	4	A	0
9/05	730	62	7	2	Clear	5	A	NE5
9/06	730	59	6	0.5	Clear	5	0	0
9/07	730	56	6	-1	Clear	5	0	0
9/08	730	53	6	-1	Clear	5	0	0
9/09	730	53	6	0	Clear	5	0	0
9/10	730	51	6	1	Clear	5	0	0
9/11	730	50	7	10	Clear	4	0	W5
9/12	730	48	7	8	Clear	4	0	0
9/13	730	48	7	6	Clear	4	A	0
9/14	730	48	5	-6	Clear	1	0	0
9/15	730	47	4	-7	Clear	1	0	0
9/16	730	43.5	3	-5	Clear	1	0	0
9/17	730	43	4.5	5.5	Clear	1	0	NW5-10
9/18	730	43	2.5	-6	Clear	1	0	0
9/19	800	41	1.5	-7	Clear	2	0	0
Average		70.8	8.8	8.4				

a Sky condition codes:

0 = no observation
1 = < 1/10 cloud cover
2 = partly cloudy; < 1/2 cloud cover
3 = mostly cloudy; > 1/2 cloud cover
4 = complete overcast
5 = thick fog

b Precipitation Codes:

A = intermittaent rain
B = continuous rain
C = snow
D = snow and rain
E = hail
F = thunder

* = River Stage was estimated.